

ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR 2023

HEARINGS BEFORE A SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS HOUSE OF REPRESENTATIVES ONE HUNDRED SEVENTEENTH CONGRESS SECOND SESSION

SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT,
AND RELATED AGENCIES

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PART 5

	Page
Fiscal Year 2023 Budget Request for the U.S. Army Corps of Engineers and Bureau of Reclamation	1
Fiscal Year 2023 Budget Request for the Department of Energy	77
National Nuclear Security Administration and Environmental Management	185
Members' Day	257
Public Witness Testimony	329



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(II)

**ENERGY AND WATER DEVELOPMENT, AND
RELATED AGENCIES APPROPRIATIONS FOR
2023**

WEDNESDAY, APRIL 27, 2022.

**FISCAL YEAR 2023 BUDGET REQUEST FOR THE U.S.
ARMY CORPS OF ENGINEERS AND BUREAU OF REC-
LAMATION**

WITNESSES

**HON. MICHAEL L. CONNOR, ASSISTANT SECRETARY OF THE ARMY
FOR CIVIL WORKS**

**DAVID PALUMBO, DEPUTY COMMISSIONER OF OPERATIONS, U.S. BU-
REAU OF RECLAMATION**

**LIEUTENANT GENERAL SCOTT A. SPELLMON, CHIEF OF ENGINEERS
AND COMMANDING GENERAL, U.S. ARMY CORPS OF ENGINEERS**

**HON. TANYA TRUJILLO, ASSISTANT SECRETARY FOR WATER AND
SCIENCE, DEPARTMENT OF THE INTERIOR**

Ms. KAPTUR. I now call the hearing on the fiscal year 2023 budget request for the U.S. Army Corps of Engineers and Bureau of Reclamation to order. Good afternoon. This will be a hybrid hearing. So, we need to address a few housekeeping matters. First, I understand that votes are anticipated to start in the 3:30 to 4:00 timeframe. We do not yet know how many votes there will be. Given that all votes after the first will be 5 minutes long, I intend to recess this hearing toward the end of the first vote. We will do our best to get as much as possible beforehand. And depending on member interest and how long the vote series lasts, return to finish this hearing. So, we do apologize for any inconvenience to our guests. And I invite the members to please come up as we have begun.

For the members joining virtually, once you start speaking, there is a slight delay before you are displayed on the main screen. Speaking into the microphone activates the camera displaying the speaker on the main screen. Do not stop your remarks if you do not immediately see the screen switch. If the screen does not change after several seconds, please make sure you are not muted. To minimize background noise and ensure the correct speaker is being displayed, we ask that you remain on mute unless you have sought recognition. And to eliminate inadvertent background noise, I or staff that I designate, may mute participants' microphones when they are not recognized.

Members are responsible for muting and unmuting themselves. If you are appearing virtually and I notice when you are recognized that you have not unmuted yourself, I will ask the staff to send you

a request to unmute yourself and then please then accept that request so you are no longer muted. In terms of the speaking order, we will begin with the chair and ranking member. Then members present at the time the hearing is called to order will be recognized in order of seniority, followed by members not present at the time the hearing is called to order.

Finally, house rules require me to remind you that we have set up an email address to which members can send anything they wish to submit in writing at any of our hearings. That email address has been provided in advance to your staff. I now recognize myself for 5 minutes for my opening statement.

We are here today to discuss the fiscal year 2023 budget request for the Army Corps of Engineers and the Bureau of Reclamation. Your agencies are a cornerstone of our economy and play a critical role in sustaining life in our Nation and preserving the vitality and sustainability of our Nation's precious water resources. Thank you to our witnesses for being with us today and joining us.

Our Energy and Water bill is a jobs and infrastructure bill. It invests in our Nation's critical water infrastructure and supports good paying middle-class jobs from coast to coast.

The investments made possible by our annual appropriation bills combined with the historic Infrastructure Investment and Jobs Act will put tens of thousands of people to work in living wage jobs focused on rebuilding the crumbling infrastructure we see all around us from coast to coast. We are truly building a better America for all.

Last year was an extraordinary period for extreme weather events across America. Texas saw a record cold snap in February rendering the power grid inoperable. In August, a water shortage was declared on the Colorado River for the first time ever, triggering looming mandatory water cuts. In Chicago, excess rainfall overwhelmed flood control systems spilling contaminated runoff into local rivers and Lake Michigan, the region's source of fresh water. And California flooded in January only to burst into flames in July, including the record setting Dixie fire.

The 2021 hurricane season was the third most active on record with 21 named storms. Hurricane Ida landed in Louisiana and worked its way up the East Coast to New England, taking the lives of more than 90 people and resulting in over \$75 billion in damage. In Alabama and Georgia, tornadoes raged for hundreds of miles. In my region of the Great Lakes, water levels reached record highs in 2019 and 2020, and 2022 levels are projected to be at or above average.

At the same time, substantial portions of our country have been left with little to no water. Nearly 100 million Americans, almost $\frac{1}{3}$ of our population, are currently living in areas experiencing drought. Six states have areas seeing exceptional drought. We have provided all members with a map that we are very grateful for that information that came from U.S. Drought Monitor in the western U.S. through a cooperation of various agencies of our government.

So, in terms of six states that have seen exceptional drought, the highest intensity level on the drought scale. With water resource needs varying from region to region, it is critical that we properly invest in our water infrastructure. Without these investments, the

dichotomy of water surpluses in the Midwest with shortages plaguing the West, poses a severe threat to our conventional way of life.

All these examples paint a clear and compelling picture of the severe weather events we will continue to see from climate change unless we take proper action. It is critical for agencies that are project based, like the Corps and Reclamation, to plan regionally and help our people to do so. And implement solutions on a watershed and sub watershed basis to make our communities more resilient.

In the Great Lakes region, projects like Brandon Road are addressing the economic and environmental damage unleashed by invasive carp species. Investments in the Soo Locks are turbocharging the industrial heartland's maritime ports and shipping industries. I hope we can work together to ensure the same level of attention is given to Ohio's ports, which are in need of additional funding to deliver sustained economic growth for the future, in a part of the country I might say has been economically battered for a very long time.

As we begin our discussion on fiscal year 2023, I am discouraged by the proposed reductions of \$1.7 billion for the Army Corps and \$486 million for Reclamation. While historic investments were made throughout the Infrastructure Investment Jobs Act, in both your agencies, we have more work to do to rebuild our Nation's crumbling infrastructure.

As we launch our hearing today, on behalf of our Nation's people, I am reminded today of the words of Daniel Webster that are carved above the Speaker's rostrum in the main chamber. "Let us develop the resources of our land, call forth its powers, build up its institutions, promote all its great interests, and see whether we also, in our day and generation, may not perform something worthy to be remembered."

There is bipartisan support in Congress for the work that your agencies undertake on behalf of the American people. And thank you for being here again and we look forward to your testimony. I will now turn to our very able Ranking Member, Mr. Simpson, for his opening remarks.

[The information follows:]



Chairwoman Marcy Kaptur
Subcommittee on Energy and Water Development
FY 2023 Budget Request for the U.S. Army Corps of Engineers and
Bureau of Reclamation
Opening Statement *As Prepared*
April 27, 2022

We are here today to discuss the fiscal year 2023 budget requests for the Army Corps of Engineers and the Bureau of Reclamation. Your agencies are a cornerstone of our economy and play a critical role in sustaining life in our nation and preserving the vitality and sustainability of our nation's precious water resources.

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Our bill is a jobs and infrastructure bill, investing in our nation's critical water infrastructure and supporting good-paying Middle Class jobs from coast to coast. The investments in annual appropriations bills – combined with the historic Infrastructure Investment and Jobs Act – will put tens of thousands of people to work in living-wage jobs focused on rebuilding the crumbling infrastructure we see all around us. We are truly building a better America for all.

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The 2021 hurricane season was the third most active on record with 21 named storms. Hurricane Ida landed in Louisiana and worked its way up the East Coast to New England, taking the lives of more than 90 people and resulting in over \$75 billion in damages. In Alabama and Georgia, tornadoes raged for hundreds of miles.

In the Great Lakes, water levels reached record highs in 2019 and 2020, and 2022 levels are projected to be at or above average. At the same time, substantial portions of our country have been left with little to no water. Nearly 100 million Americans are currently living in areas experiencing drought. Six states have areas seeing "exceptional drought" – the highest intensity level on the drought scale. With water resource needs varying from region to region, it is critical that we properly invest in our water infrastructure. Without these investments, the dichotomy of water surpluses in the Midwest and shortages in the West poses a severe threat to our very way of life.

All these examples paint a clear and compelling picture of the severe weather events we will continue to see from climate change unless we take action. It is critical for agencies that are



project-based – like the Corps and Reclamation – to plan regionally and implement solutions on a watershed and subwatershed basis to make our communities more resilient.

In the Great Lakes region, projects like Brandon Road are addressing the economic and environmental damage unleashed by invasive carp species, while investments in the Soo Locks are turbocharging the Industrial Heartland's maritime shipping industries. I hope we can work together to ensure the same level of attention is given to Ohio's ports, which are in need of additional funding to deliver sustained economic growth for the future.

As we begin our discussion on fiscal year 2023, I am discouraged by the proposed reductions of \$1.7 billion for the Army Corps and \$486 million for Reclamation. While historic investments were made through the Infrastructure Investment and Jobs Act in both of your agencies, we have more work to do to rebuild our nation's crumbling infrastructure.

I'm reminded today of the words of Daniel Webster, "Let us develop the resources of our land, call forth its powers, build up its institutions, promote all its great interests, and see whether we also, in our day and generation, may not perform something worthy to be remembered."

There is bipartisan support in Congress for the work that your agencies undertake on behalf of the American people. Thank you for being here, and we look forward to your testimony.

I'll now turn to our Ranking Member, Mr. Simpson, for his opening remarks.

Mr. SIMPSON. Thank you, Chairwoman Kaptur. And thank you all for being here today. Looking at the time and stuff, and we are going to have votes before too long, I am going to forego my opening statement and enter it for record. So, I want to hear from you more than you want to hear from me. So, I appreciate that. I yield back.

[The information follows:]

OPENING STATEMENT
The Honorable Mike Simpson
Ranking Member, Energy and Water Development Subcommittee
House Committee on Appropriations

Hearing on the Fiscal Year 2023 Budget Requests for
U.S. Army Corps of Engineers and Bureau of Reclamation
April 27, 2022

Thank you, Chairwoman Kaptur. I'd like to join you in welcoming our witnesses. I'm very pleased that we can be back here in-person today to discuss the fiscal year 2023 budget requests for the U.S. Army Corps of Engineers and the Bureau of Reclamation.

The work of these agencies is critical to public health and safety and the national economy. From flood control projects that reduce the risks of flooding,

- to water delivery systems that provide drinking water to communities and irrigation water to farms,
- to inland and navigation channels that allow goods and resources to be transported efficiently to and from global markets,
- to hydropower facilities that generate emission-free baseload power to the grid,
- these programs help our nation to thrive.

Unfortunately, the budget requests for both agencies are reductions from enacted levels. The \$6.6 billion request for the Corps of Engineers is a reduction of more than 20 percent from FY22. The Construction and Mississippi River and Tributaries accounts – and navigation and flood control construction in particular – bear the brunt of the cuts to the Corps budget.

The \$1.4 billion request for the Bureau of Reclamation is a reduction of more than 25 percent from enacted levels. Part of this reduction is a result of a budget gimmick – a proposal to fund Indian Water Rights Settlements through mandatory funding rather than discretionary appropriations. I'm generally skeptical of gimmicks like this one and look forward to discussing its impacts.

In contrast to Administrations of both parties, Congress, on a bipartisan basis, has repeatedly supported these programs through annual funding increases and, at times, supplemental appropriations to address extraordinary events like hurricanes and droughts.

Today's hearing gives us an opportunity to discuss execution of this previously enacted funding. We need to understand each agency's plans for ensuring this money is used efficiently and effectively, any challenges that must be worked through, and any additional actions this Committee could take to help ensure success.

Thank you, Chairwoman Kaptur, for calling this hearing. I look forward to the discussion with our witnesses.

Ms. KAPTUR. Thank you very much, Mr. Ranking Member. And we are now going to call upon the Full Committee Ranking Member Congresswoman Granger, Kay Granger. I would like to turn to her for her opening remarks.

Ms. GRANGER. Thank you Chairwoman Kaptur. I would like to thank you and Ranking Member Simpson for holding this hearing. I would also like to thank our witnesses for being here today. Your agencies are the Nation's experts on water resources development and management issues, which directly impact all of our congressional districts. The flood prevention work the Army Corps does is especially critical to communities throughout the Nation. The Corps is also responsible for improving and maintaining navigation channels and harbors around the country.

These waterways are vital to our national economy in numerous ways. Waterways are crucial to getting oil and natural gas to global markets. It is especially important now as many countries are looking to decrease reliance on Russian energy and are looking for alternative sources.

Despite the bipartisan support this committee has shown through increasing funding for these programs, the administration has once again proposed to reduce budgets. I am particularly concerned that the Corps budget disproportionately cuts navigation and flood control construction, even though we know these are significant needs in these areas. We need to find resources needed for these agencies. And I look forward to working once again with my colleagues on both sides of the aisle, in the House and the Senate, to do just that. I look forward to the testimony from our witnesses today and thank you, Madam Chair, and I yield back.

Ms. KAPTUR. Thank you very much Ranking Member Granger. Let me express, again, the subcommittee's gratitude to our witnesses for joining us here today. We welcome your observations of how the Army Corps of Engineers and Bureau of Reclamation can strengthen our Nation's water infrastructure while creating more and better jobs as our Nation confronts the challenges of the current moment, including climate change.

First, we will have Ms. Tanya Trujillo, the Assistant Secretary for Water and Science at the Department of the Interior. Ms. Trujillo is a lawyer with more than 20 years of experience working on complex natural resource management issues and interstate and transboundary water agreements.

Second, we will have Mr. Michael Connor, the Assistant Secretary of the Army for Civil Works. In this role, Mr. Connor establishes policy direction and supervises the Department of the Army functions relating to the Army Corps of Engineers Civil Works Program. And prior to his appointment, Mr. Connor served as the Deputy Secretary of Interior and also served as the Commissioner of the Bureau of Reclamation. Mr. Connor, I am looking forward to working with you in your role and to getting you out to Ohio and to visit our district.

And next, we will have Lieutenant General Spellmon. Lieutenant General Spellmon assumed duties as the 55th Chief of Engineers and Commanding General of the United States Army Corps of Engineers on September 10, 2020, after most recently serving as the Deputy Commanding General for Civil and Emergency Operations.

And, finally, we will have Mr. David Palumbo. Mr. Palumbo is the Bureau of Reclamation's Deputy Commissioner of Operations. He oversees operations in Reclamation's five regions, the Native American and International Affairs Office and Technical Resources.

We are also delighted that Mike Brain, our excellent former professional staff member has joined Reclamation as a deputy commissioner.

Thank you for taking the time to be here today. Without objection, your written statements will be entered into the record. Given the time constraints placed on all of us by votes, please, if you can summarize your remarks in just 2 minutes each, starting with Ms. Trujillo.

Ms. TRUJILLO. Thank you very much, Chairwoman Kaptur, and Representative Simpson, and the members of the subcommittee. I am very pleased to be here today on behalf of the Department of the Interior. The Department of the Interior has a wide variety of responsibilities with respect to management of land and water issues. But our role in the west has been made even more challenging by the severe drought we are currently facing. We have seen hotter and drier conditions that have resulted in lower runoff levels and diminished water supply, in addition to the extreme weather that has been happening elsewhere in the country.

We are also seeing more extreme fire seasons. And these are conditions that I have experienced firsthand as a New Mexican, where my family ranchlands in New Mexico right now are within the fire area of one of the active fires.

The funding that we have in our request is complementary to the funding that we have received through the Bipartisan Infrastructure Law, which provides a historic opportunity to be able to address some of the challenges we are seeing now. Both in terms of responding to the short-term emergency situation, but also in terms of building the resiliency that our projects can do through modernizing our aging infrastructure and expanding opportunities for programs like water recycling, expanding water storage, and many of the other effective programs that the Bureau of Reclamation has in place.

Our 2023 budget request includes \$1.4 billion for Reclamation programs and projects. These programs provide water supplies for agricultural, municipal, and industrial purposes throughout the West. Our programs also support stream restoration efforts and habitat for endangered species. And we are more committed than ever to ensure that we are meeting our obligations to our Tribal partners, not only through implementation of the existing Indian water rights settlements, but through all of our programs, which we are seeking to make available to communities as widely as possible.

The funding that we seek through our current request will allow us to continue to implement programs such as the Rural Water Program, the WaterSMART Program, and to continue to address our aging infrastructure needs in the context of the changing climate we are experiencing.

I am very pleased to provide written testimony to the committee and happy to be here to answer your questions as well.

[The information follows:]

**Statement of Tanya Trujillo
Assistant Secretary for Water and Science
U.S. Department of the Interior
Before the
Subcommittee on Energy and Water Development, and Related Agencies
Committee on Appropriations
U.S. House of Representatives
On The President's Fiscal Year 2023 Budget**

Wednesday, April 27, 2022

Thank you, Chairwoman Kaptur, Ranking Member Simpson, and members of this Subcommittee for the opportunity to discuss with you the President's Fiscal Year 2023 budget for the Department of the Interior's Bureau of Reclamation and Central Utah Project Completion Act office. I am Tanya Trujillo, Interior's Assistant Secretary for Water and Science, and I am honored to be here today. I appreciate your ongoing support of our programs.

The 2023 budget request is \$18.1 billion in current authority for Department of the Interior's programs. This request complements the landmark 2021 Bipartisan Infrastructure Law (BIL) investments we are now implementing. This historic investment is increasing the resilience of critical ecosystems, Tribal Nations, and communities to meet the challenges of critical drought and threats of wildland fires, which pose unprecedented risks across the country.

The 2023 President's Budget for Interior complements this investment and maintains the Administration's commitments to deliver jobs and economic growth, build up America's resilience to climate change, advance a transition to clean energy, strengthen the Nation-to-Nation relationship with Tribal Nations, and expand work with partners to conserve lands and increase access to outdoor recreation. The 2023 budget continues to reflect the importance of science, diversity and inclusion, and the goal to leverage the power of collaboration to support Interior's important missions.

Interior has unique responsibilities on behalf of our country to steward many of our lands, waters, and natural resources; provide essential scientific information about those resources; and uphold the Nation's commitments to American Indians and Alaska Natives. As such, Interior's programs inherently include a focus on the climate crisis. Worsening drought, increased weather risks, more extreme wildfires, profound threats to wildlife habitats, warming water temperatures, and new threats from invasive species are among the tangible challenges land and resource managers face right now.

The 2023 budget recognizes that Interior plays a crucial role in the whole-of-government approach to tackling climate change. The 2023 budget continues funding for the immediate challenges of the changing climate while laying the foundation to build America's resilience and promoting economic growth, creating good-paying jobs, and ensuring that 40 percent of the benefits of certain climate and clean energy investments accrue to disadvantaged communities.

The effects of the current drought conditions in the West are severe and long lasting, and a full recovery will take years. The challenges our western communities are facing now will likely continue through 2023. Drought analyses, combined with projections of future hydroclimate conditions, suggest that overall, drought severity and duration will increase across the West in the coming century. The BIL provides \$8.3 billion for the Bureau of Reclamation to invest over 5 years to build up America's ability to address infrastructure needs and pervasive drought conditions in the West. This work is underway with States, Tribes, and communities in the most drought-affected geographic areas to ensure predictable and sustainable water supplies.

Complementing this transformative investment, the President's 2023 budget includes \$1.4 billion for Reclamation programs and projects, of which \$1.27 billion is for the Water and Related Resources account which includes programs such as the Rural Water Program, the WaterSMART Program, Aging Infrastructure and Extraordinary Maintenance activities and funding for programs throughout Reclamation's various projects and regions.

Reclamation's water and power projects throughout the western United States provide water supplies for agricultural, municipal, and industrial purposes. Reclamation's projects also produce hydropower and maintain ecosystems that support fish and wildlife, hunting, fishing, and other recreation, and strengthen rural economies. These programs support a suite of infrastructure improvements, and water conservation, recycling, and planning programs to help communities mitigate drought and climate change impacts. For example, the 2023 budget includes \$62.4 million for Reclamation's WaterSMART (Sustain and Manage America's Resources for Tomorrow) programs, which are implemented cooperatively with States, Tribes, and local communities as they plan for and implement actions to build resiliency.

The investments described in Reclamation's FY 2023 budget, in combination with the Bipartisan Infrastructure Law implementation and prior year efforts, will ensure that Reclamation can continue to provide reliable water and power to the American West. Water management, improving and modernizing infrastructure, using sound science to support critical decision-making, finding opportunities to expand capacity, reducing conflict, and meeting environmental responsibilities were all addressed in the formulation of the FY 2023 budget.

The Reclamation FY 2023 budget continues to support drought-impacted areas of the West. For example, in addition to the WaterSMART Drought Response and Comprehensive Drought Plans program request of \$24 million, additional funding has been requested for specific programs to continue the Department's efforts to address the ongoing drought conditions around the West. For example, \$11.5 million is requested for the Lower Colorado River Operations Program to implement drought contingency plans and response actions to maintain elevations at Lake Mead. Another \$2.0 million is requested for water infrastructure investments along the Texas border, and \$5.0 million of the request within the Central Valley Project in California is specific to drought planning and resiliency efforts that will be implemented in coordination with the California Department of Water Resources. These investments will allow Interior to continue to lead the Interagency Drought Relief Working Group with the Department of Agriculture. Interior is committed to using every resource available to ensure that irrigators, Tribes, and adjoining communities receive adequate assistance and support. Our shared priority is to support

efforts to build resilient communities and protect our water supplies for people and the natural environment.

The budget also proposes legislation to complement the \$2.5 billion investment in the BIL that DOI received for the Indian Water Rights Settlement Completion Fund which will accelerate completion of enacted Indian Water Rights Settlements. The 2023 budget proposes \$340.0 million in mandatory funding over 10 years to support the operations, maintenance, and repairs associated with enacted Bureau of Reclamation Indian Water Rights Settlements. This mandatory investment is reflected in the 2023 request for BIA Indian Land and Water Rights Claims. The Administration is also interested in working with Congress on an approach to provide a mandatory funding source for future settlements.

In addition to the Indian Water Rights Settlement Completion Fund, 2023 represents the fourth year of Reclamation Water Settlements Fund allocations, which provide \$120 million in annual mandatory authority to Reclamation for Indian water rights settlements. Funding made available by previous mandatory authorities, such as those authorized in the Claims Resolution Act, remain available for settlement implementation, while the ongoing operations and maintenance requirements of the Arizona Water Settlement Act are expected to continue to be supported within the Lower Colorado River Basin Development Fund.

The FY 2023 discretionary request for Reclamation includes \$20.0 million for the Native American Affairs program to work with and support Tribes in the resolution of their water rights claims and to develop sustainable water sharing agreements and build Tribal technical capacity. Additional funding also supports Reclamation's work with Tribal partners through many ongoing efforts such as rural water projects, WaterSMART programs, Colorado River Basin operations, the Yakima River Basin Water Enhancement Project, activities of the Klamath Project, Columbia River operations, and others.

Science is integral to the accomplishment of Interior's core mission activities. The 2023 budget includes more than \$1.4 billion for research and development programs across the Department, but the application of science is also essential in carrying out direct mission activities. Interior's natural resource managers rely on science every day as they gather, analyze, and apply inventorying and monitoring data to inform stewardship decisions. The ability to examine data regarding the status of lands, waters, ecosystems, and resident species plays an increasingly important role in understanding and building resilience to the effects of climate change.

Communities across the country are considering the changing climate not only in the context of drought and disaster preparedness but also as they plan long-term infrastructure and program investments. Interior programs support these efforts in a variety of ways. The 2023 budget leverages the science of the U.S. Geological Survey (USGS) to address real, on-the-ground climate challenges facing communities. USGS manages the Groundwater and Streamflow Information Program, which maintains a nationwide network of streamflow and water-level information from more than 11,000 sites. Interior's budget includes \$117.0 million for this program, an increase of \$6.4 million above the 2022 enacted appropriation. The information from the network is available online to help natural resource managers, scientists, and emergency

managers across the country with monitoring for floods and drought and with forecasting water availability for natural resources and crops.

Reclamation's budget requests \$25.3 million for Research and Development (R&D) programs including both Science and Technology, and Desalination and Water Purification Research. The Desalination and Water Purification Research program addresses drought and water scarcity impacts caused by climate change by investing in desalination and water treatment technology development and demonstrations for the purpose of more effectively converting unusable waters to useable water supplies. The Science and Technology program invests in innovation to address the full range of technical issues confronting Reclamation water and hydropower managers, including the Snow Water Supply Forecasting Program that aims to improve water supply forecasts through enhanced snow monitoring and water management to address the impacts of drought and a changing climate.

Hydropower is an important component of our Nation's energy portfolio. Each year on average, Reclamation generates about 40 million megawatt hours of electricity and collects over \$1.0 billion in gross power revenues for the Federal Government. Reclamation's FY 2023 budget request includes \$5 million to increase Reclamation's hydropower capabilities and revenue from existing public infrastructure and reduce project operating costs (e.g., water and power delivery costs). Revenues derived from hydropower production are invested in the underlying public infrastructure to ensure continued, reliable operations and benefits.

Central Utah Project Completion Act (CUPCA)

The Department's 2023 CUPCA Program budget of \$20 million reflects the Administration's commitment to strengthening our climate resiliency and supporting conservation partnerships and continues the progress of prior appropriations including \$50 million included for the CUPCA Program in the Bipartisan Infrastructure Law. As authorized, the completion of the Central Utah Project Utah Lake System pipelines will deliver 60,000 acre-feet of municipal and industrial water to Salt Lake and Utah Counties. The completed project will provide increased water security, helping communities adapt to and increase their resiliency under changing climate conditions.

The request provides funding to continue construction of the system; to support the recovery of endangered species; and implements fish, wildlife, and recreation mitigation and water conservation projects. One of the goals of the project is the recovery of the June sucker fish, a critical element of listed species recovery efforts.

Conclusion

Thank you for the opportunity to testify on behalf of the President's 2023 budget for the Department of the Interior's Bureau of Reclamation and Central Utah Project Completion Act office. I look forward to working with the Committee to implement this budget. This concludes my testimony, and I am happy to answer any questions you may have.

Ms. KAPTUR. Thank you so very much, Ms. Trujillo. Now, Mr. Connor, please proceed.

Mr. CONNOR. Thank you, Madam Chairwoman. Ranking Member Simpson, Ranking Member Granger, members of the committee, thank you for the opportunity to be here to discuss the President's budget request for the Army Civil Works Program.

The fiscal year 2023 budget request includes \$6.6 billion for Army Civil Works. This is the second highest budget level in over 2 decades, and on top of the \$23 billion we received in 2021 through the Disaster Supplemental and the IIJA legislation. The budget is focused on smart investments yielding high economic and environmental returns, increasing resilience to climate change for the benefit of both communities and aquatic ecosystems based on the best available science, supporting a strong economy through safe, efficient, and reliable commercial navigation, and investing in disadvantaged communities that have too often been left behind.

With this budget, the Army will continue working with community partners to develop, manage, restore, and protect our Nation's precious water resources, particularly as it relates to the three primary missions of the Civil Works Program: commercial navigation, flood protection and storm damage reduction, and aquatic ecosystem restoration.

With respect to disadvantaged communities, the administration has set a goal that 40 percent of the overall benefits in Federal investments in climate flow to disadvantaged communities, the Justice 40 initiative.

Actions associated with environmental justice include examining our activities in key programs to determine whether benefits have accrued to disadvantaged communities. There are also funds, one, to provide access to technical assistance programs and develop projects that benefit disadvantaged communities. And two, ensure that any updates to our policies and guidance do not result in disproportionate negative impact to those communities.

The fiscal year 2023 budget also continues the process of addressing the climate crisis and evaluating civil works programs to identify appropriate access to support the administration's efforts to tackle climate change at home and abroad.

These efforts include incorporating natural and nature-based infrastructure solutions wherever possible. Investments include 974 million for construction of flood and storm damage reduction and aquatic ecosystem restoration projects. Over 90 million to improve the resilience of core infrastructure climate change, and 37 million for technical assistance programs. We also include funding to continue studies to investigate climate resilience in numerous areas such as Great Lakes coasts, as well as central and southern Florida.

And with that, I will finish my statement and I am happy to answer questions at the appropriate time.

[The information follows:]

DEPARTMENT OF THE ARMY

**WRITTEN STATEMENT
OF**

**MR. MICHAEL L. CONNOR
ASSISTANT SECRETARY OF THE ARMY
FOR CIVIL WORKS**

**BEFORE
COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT
AND RELATED AGENCIES
UNITED STATES HOUSE OF REPRESENTATIVES**

ON

**THE FISCAL YEAR 2023 BUDGET
FOR THE CIVIL WORKS PROGRAM
OF THE ARMY CORPS OF ENGINEERS**

April 27, 2022

Chairwoman Kaptur, Ranking Member Simpson and distinguished members of the committee, thank you for the opportunity to be here today to discuss the transformational investments of the President's Budget request for the Army Civil Works program.

The Fiscal Year 2023 Budget request includes \$6.6 billion for the Army Civil Works program. These investments continue to focus on yielding high economic and environmental returns; helping communities to reduce their risks and adapt to climate change, and restoring aquatic ecosystems in ways that will make them more sustainable and more resilient to climate change, based on the best available science; supporting a strong economy by facilitating safe, reliable and sustainable commercial navigation; and promoting environmental justice and investing in disadvantaged communities that have too often been left behind. The Army will continue working with community partners to

develop, manage, restore, and protect our Nation's precious water resources.

We believe in smart investments that improve the durability of our water management resources; and moving to a more sustainable posture for our water resources all across America.

The Administration has also set a goal that 40 percent of the overall benefits of Federal investments in climate, flow to disadvantaged communities – the Justice40 Initiative. The Justice40 Initiative is a critical part of the Administration's whole-of-government approach to advancing environmental justice.

The Budget focuses on the highest performing work within the three main missions of the Army Civil Works program:

- commercial navigation,
- flood and storm damage reduction, and
- aquatic ecosystem restoration.

In developing the Budget, we gave consideration to advancing two key objectives including: 1) increasing infrastructure and ecosystem resilience to climate change and decreasing climate

risk for communities based on the best available science; and 2) promoting environmental justice in disadvantaged communities in line with Justice40 and creating good paying jobs that provide the free and fair chance to join a union and collectively bargain.

The FY 2023 Budget continues the process of addressing the climate crisis and evaluating the Civil Works program to identify appropriate actions to support the Administration in tackling the climate crisis at home and abroad. The Budget includes over \$1 billion to support the U.S. Army Corps of Engineers' (Corps) climate resiliency efforts and reduce the risk of damages from floods and storms and restore the Nation's aquatic ecosystems. Investments include \$974 million for construction of flood and storm damage reduction and aquatic ecosystem restoration projects, over \$90 million to contribute to climate resilience efforts such as improving the resilience of Corps infrastructure to climate change, and \$37.4 million for technical and planning assistance programs with emphasis on work to help local communities identify, understand, and address their flood risks including work

that would directly benefit disadvantaged communities by improving their resilience to climate change. The Budget also includes funding to continue studies intended to investigate climate resilience along the Great Lakes coast as well as in Central and Southern Florida.

The Army is also committed to securing environmental justice and spurring economic opportunity for disadvantaged communities that have been historically marginalized and overburdened by pollution and experience underinvestment in essential services. The Army is actively working, along with other Federal agencies, towards ensuring 40 percent of the benefits of climate and clean energy investments are directed to disadvantaged communities. These actions include an examination of the activities of key programs to determine whether those programs' benefits have accrued to disadvantaged communities. The FY 2023 Budget includes funds to — 1) improve outreach and access to Civil Works information and resources; 2) improve access to Civil Works technical assistance programs (e.g., Planning Assistance

to States and Floodplain Management Services) and maximize the reach of Civil Works projects to benefit disadvantaged communities, in particular as it relates to climate resiliency; and, 3) ensure any updates to Civil Works policies and guidance will not result in a disproportionate negative impact on disadvantaged communities.

The Administration's America the Beautiful initiative sets a goal of conserving at least 30 percent of America's lands and waters by 2030. The FY 2023 Budget includes funds to advance this goal at Army Corps-owned projects by creating safe outdoor opportunities in nature-deprived communities, supporting Tribally led conservation and restoration priorities, expanding collaborative conservation of fish and wildlife habitats and corridors, and increasing access for outdoor recreation.

In support of this Administration's commitment to our Nation's coastal ports and inland waterways, the FY 2023 Budget includes over \$3 billion for the study, design, construction, operation and maintenance (O&M) of inland and coastal navigation projects.

These funds will be used in conjunction with the \$465 million provided in the Bipartisan Infrastructure Deal Spend Plan for FY 2023 for the maintenance and repair of existing navigation harbors, channels, and navigation locks and dams on the Nation's ports and waterways that support commercial navigation. The Budget proposes to derive over \$1.7 billion from the Harbor Maintenance Trust Fund for eligible projects with an emphasis on operation and maintenance, including dredging, of completed projects.

The Budget contains over \$1.5 billion for flood and storm damage reduction, including an increase in funding for technical and planning assistance to local communities to enable them to understand and to better manage their flood risks. The Budget proposes to assist these local efforts, with emphasis on non-structural approaches.

The Budget includes \$624 million for aquatic ecosystem restoration, including \$407 million for the South Florida Ecosystem Restoration (SFER) program, in addition to the \$1.1

billion allocated to the SFER program in the Bipartisan Infrastructure Deal Spend Plan, which together will enable significant progress in restoring this valuable ecosystem.

The Budget supports a Civil Works program that has a diverse set of tools and approaches to working with local communities, whether this means funding projects with our cost-sharing partners, providing planning assistance and technical expertise to help communities make better risk-informed decisions, or participating in the national and international conversations on how to best address our water resources challenges.

The Budget also focuses on maintaining the vast water resources infrastructure that the Corps owns and manages, and on finding innovative ways to rehabilitate it or divest it to others.

The FY 2023 Budget provides more than \$1.2 billion in the construction account. The construction program uses objective, performance-based guidelines to allocate funding toward the highest performing economic, environmental, and public safety investments.

The FY 2023 Budget includes \$50 million in Construction funds for the Innovative Funding Partnership program, which supports Corps efforts to accelerate and improve the delivery of water resources projects through greater non-Federal participation.

The FY 2023 Budget provides nearly \$2.6 billion in the Operation and Maintenance account. For O&M, the Budget emphasizes maintaining and improving the performance of existing projects. The allocation of funding among projects for maintenance reflects a risk-informed approach that considers both project and project component conditions and the potential consequences of a failure. The Budget gives priority to the maintenance of coastal ports and inland waterways with the highest commercial traffic. The Budget also includes \$60 million for operation and maintenance work to mitigate for adverse impacts from the operation of existing Army Corps-owned projects and \$20 million to install the necessary refueling infrastructure to

support zero-emission vehicles at existing Army Corps-owned projects.

The FY 2023 Budget includes \$106 million in the Investigations account.

The FY 2023 Regulatory Program is funded at \$210 million to protect the nation's waters and wetlands and provide efficiency in permit processing.

I am very honored to implement the President's priorities for the Army Civil Works program. I'm excited to be a part of a great team — serving our Nation.

Thank you for inviting me here today. I look forward to your questions.

Ms. KAPTUR. Thank you very much, Mr. Connor. Lieutenant General Spellmon, please begin.

General SPELLMON. Thank you, Chairwoman Kaptur, Ranking Member Simpson, Ranking Member Granger, and distinguished members of the subcommittee. I am honored to testify before you today and thank you for the opportunity to discuss the fiscal year 2023 budget of the U.S. Army Corps of Engineers. Another record investment in our civil works program.

Today, I look forward to discussing the status of important Corps projects and programs, as well as answering questions the committee may have regarding the 2023 budget. Most importantly, I look forward to continuing to work with this committee, Congress, and the administration to address the Nation's water resource infrastructure needs.

We greatly appreciate the committee's continued support of the Corps' program. With recent supplemental appropriations and continued record high annual appropriations, the Corps Civil Works Program has experienced significant growth over the past several years. This substantial level of investment enables critical water resources projects to be studied and constructed. It also helps with developing innovative approaches to address some of our most pressing challenges through focused research and development.

The fiscal year 2023 budget reflects a targeted approach to continue investing in our water resources programs and supports the Assistant Secretary's priorities for the Corps by upgrading our Nation's waterways, protecting communities and ecosystems, better serving disadvantaged communities, investing in science and research and development, and finally, sustaining and improving our communications and relationships with our partners.

The 2023 budget taken with other recent funding, provides the Corps with what the Secretary calls a transformational opportunity to deliver water resource infrastructure projects that will positively impact communities across this great Nation. I will conclude by saying the Corps does not accomplish anything on its own. We draw from our engineering expertise and build upon our relationships with our non-Federal partners, project stakeholders, and Congress to enable us to succeed. I look forward to continuing our great collaboration as we continue to take on the challenges that face us today and those of tomorrow. And thank you again, Chairwoman Kaptur, Ranking Member Simpson. I look forward to any questions you may have.

[The information follows:]

**DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS**

COMPLETE STATEMENT OF

**LIEUTENANT GENERAL SCOTT A. SPELLMON
CHIEF OF ENGINEERS**

**BEFORE
COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT
UNITED STATES HOUSE OF REPRESENTATIVES**

ON

**THE FISCAL YEAR 2023 BUDGET
FOR THE CIVIL WORKS PROGRAM
OF THE U.S. ARMY CORPS OF ENGINEERS**

APRIL 27, 2022

Chairwoman Kaptur, Ranking Member Simpson, and Members of the Subcommittee, I am honored to testify before your committee today, along with the Honorable Michael Connor, Assistant Secretary of the Army for Civil Works, regarding the President's Fiscal Year 2023 (FY 2023) Budget (Budget) for the Army Civil Works Program.

Through the Civil Works program, the United States Army Corps of Engineers (Corps) works with other Federal agencies, and with state, tribal, and local agencies, as well as others, to develop, manage, restore, and protect water resources, primarily through the study, construction, and operation and maintenance of water-related infrastructure projects. The Corps focuses on work that provides the highest economic, environmental, and public safety returns to the Nation. The Corps also regulates development in waters of the United States and works with other Federal agencies to help communities respond to, and recover from, floods and other natural disasters. The FY 2023 Budget invests in improving the Nation's water infrastructure, including at U.S. coastal ports, while incorporating climate resilience efforts into the Corps' commercial navigation, flood and storm damage reduction, and aquatic ecosystem restoration work.

The Corps uses its engineering expertise and its relationships with project sponsors and stakeholders to develop innovative approaches to address some of the most pressing water resources challenges facing the Nation. I am committed to the Secretary's priorities for the Army Civil Works program, including investing in the Nation's coastal ports and inland waterways to facilitate waterborne transportation and strengthen economic growth; helping communities to reduce their risks and adapt to climate change; restoring aquatic ecosystems in ways that will make them more sustainable and more resilient to climate change; modernizing the Civil Works program to better serve the needs of disadvantaged communities; investing in science, research, and development to deliver enduring water-resource solutions; and strengthening communications and relationships to solve water resource challenges. I am absolutely focused on ensuring that we deliver studies and finish quality projects safely, on time, and within budget. These priorities will ensure a better return on taxpayer investment and improve the lives of all Americans. Under my oversight and direction, and with the leadership of Assistant Secretary Connor and his team, the Corps is committed to efficiently and effectively executing the Civil Works program.

The Corps' Military program also continues our work across the globe with a presence in more than 110 countries supporting national security and our Combatant Commanders.

SUMMARY OF FY 2023 BUDGET

The Civil Works program is performance-based. It uses a targeted approach to invest in our water resources and promote climate resiliency, which will benefit the Nation's economy, environment, and public safety – now and in the future. With the requested funds, the Corps will emphasize investments in high return projects; increasing resiliency to climate change; facilitating safe, reliable, and sustainable commercial navigation; and accelerating and improving delivery of water resource projects.

The Corps focuses on high-performing projects and programs within its three main water resources missions: commercial navigation, flood and storm damage reduction, and aquatic ecosystem restoration. The Budget includes \$6.601 billion in discretionary funding for Civil Works activities throughout the Nation.

INVESTIGATIONS

For the Corps Investigations program, the FY 2023 Budget includes \$105.9 million in the Investigations account and \$9.75 million in the Mississippi River and Tributaries account. The Corps uses these funds to evaluate water resources problems and opportunities, design projects within the three main Civil Works mission areas, and support related work. The Budget also supports planning assistance and technical assistance programs, where the Corps shares its expertise with local communities to help them identify and understand their water resources problems and helps them to develop options including ways that they can increase their resilience to and preparedness for flood risks.

CONSTRUCTION

For the Corps Construction program, the Budget includes \$1.221 billion in the Construction account and \$66.7 million in the Mississippi River and Tributaries account.

The goal of the Civil Works program is to produce as much value as possible for the Nation from the available funds. Projects are primarily funded based on their economic, environmental and safety returns. The selection process includes giving priority to investments, on a risk-informed basis, in dam safety assurance, seepage control, and static instability correction work at dams that the Corps owns and operates, and work to address significant risk to human safety, as well as construction of dredged material disposal facilities for high and moderate use segments of commercial deep-draft, shallow-draft, and inland waterways projects. In developing the FY 2023 Budget, we also gave consideration to projects that provide climate change benefits to disadvantaged communities.

The Budget provides \$407 million for the South Florida Everglades Restoration (SFER) program, which includes the Everglades. This amount, as well as the \$1.1 billion included in the Infrastructure Investment and Jobs Act Spend Plan, will enable significant progress on restoration of this unique ecosystem. The Budget funds four projects to completion: (1) Chickamauga Lock, Tennessee River, TN; (2) Corpus Christi Ship Channel, TX (Main Channel and Barge Lanes); (3) American River Common Features, Natomas Basin, CA; and (4) Pipestem Lake, ND.

OPERATION AND MAINTENANCE (O&M)

All structures age and can deteriorate over time, causing a potential decline in reliability. As stewards of a large portfolio of water resources projects, the Corps is working to sustain the benefits that the key features of this infrastructure provide.

The Corps continues to improve the efficiency and effectiveness of the operation and maintenance of its large portfolio of water resources projects. The Corps does so by targeting its investments in infrastructure maintenance, repair, and rehabilitation on a risk-informed basis. It invests in the highest priority needs with emphasis on the key features of the infrastructure that the Corps owns and operates, and in work that will reduce long-term O&M costs in real terms.

Generally, the O&M program supports completed works owned or operated by the Corps, including operation and maintenance of locks and dams along the inland waterways; maintenance dredging of inland and coastal Federal channels; operation and maintenance of multi-purpose dams and reservoirs for flood risk reduction and related purposes such as hydropower; monitoring of completed navigation and flood damage reduction projects; and management of Corps facilities and associated lands, including serving as a responsible steward of the natural resources on Corps lands.

For the Corps O&M program, the Budget includes \$2.599 billion in the Operation and Maintenance account, \$1.704 billion in the Harbor Maintenance Trust Fund, and \$148.5 million in the Mississippi River and Tributaries account. These funds will be used in conjunction with the \$1 billion provided in the Infrastructure Investment and Jobs Act for FY 2023 for operation and maintenance work, including \$465 million for the maintenance and repair of existing navigation harbors, channels, and navigation locks and dams on the Nation's ports and waterways that support commercial navigation.

REGULATORY PROGRAM

Through the Regulatory program, the Corps protects the Nation's waters including wetlands, and regulates development that could impede navigation, while allowing reasonable development to proceed. The Budget proposes the necessary level of funding for the Regulatory program to enable the Corps to protect and preserve these water resources. The FY 2023 Budget provides \$210 million for this program.

REIMBURSABLE PROGRAM

Through the Interagency and International Services (IIS) Reimbursable program, the Corps assists other Federal agencies, state, local, tribal governments, and those of other countries with timely, cost-effective solutions where these partners do not have the capability to act as their own design and construction agent. The work is principally technical oversight and management of engineering, environmental, and construction projects is financed by the partners we service. We only accept agency requests that are consistent with our core technical expertise, in the national interest, and that can be executed without impacting our primary mission areas.

EMERGENCY MANAGEMENT

The FY 2023 Budget includes \$35 million in funding for the Flood Control and Coastal Emergencies account to enable the Corps to prepare for emergency operations in response to natural disasters. The Budget for the emergency management program also includes \$5.5 million for the National Emergency Preparedness Program.

CONCLUSION

The FY 2023 President's Budget for the Army Civil Works Program represents a continuing, fiscally prudent investment in the Nation's water resources infrastructure and restoration of aquatic ecosystems. The Army is committed to a performance-based Civil Works program, based on innovative, resilient, and sustainable risk-informed solutions.

Thank you, Madam Chairwoman and Members of Subcommittee. This concludes my statement. I look forward to answering any questions you and other Members of the Subcommittee may have.

Ms. KAPTUR. Thank you, General Spellmon. Now, we will call upon Mr. Palumbo.

Mr. PALUMBO. Thank you, Chairwoman Kaptur, Ranking Member Simpson, and the members of the subcommittee for the opportunity to discuss the President's budget for the Bureau of Reclamation. I am David Palumbo, Acting Commissioner.

Reclamation's working relationship with the subcommittee has helped us address both longstanding and emerging challenges in the west. Addressing drought resilience, water security, climate change adaptation, ecosystem health, and issues of equity are essential, as are the continuing needs to secure, maintain, and modernize our Nation's water infrastructure.

We have a generational opportunity to couple our discretionary budget request with that of the Bipartisan Infrastructure Law to put money to work on the ground to advance these vital needs for the American people.

I would like to acknowledge the significant, expansive, and persistent drought. In most western watersheds, there have been successive and compounding years of drought, exacerbating the dire conditions on the ground. These hydrologic conditions have resulted in the need to make difficult decisions. Many water users, power contractors, Tribes, and related communities have had to make significant sacrifices.

These situations highlight the need for immediate actions, as well as thoughtful planning for on the ground work to make both our infrastructure and operational decisions more resilient to withstand future water resource scarcity and variability. Reclamation's budget priorities reflect a commitment to drought planning and response activities to promote water security. Reclamation must also plan for the future of its infrastructure. Reclamation's dams and reservoirs, water conveyance systems, and power generating facilities serve as the water and power infrastructure backbone of the American west. However, as with all infrastructure, these features are aging and are in need of critical maintenance.

This being said, it is not sufficient to address infrastructure needs without considering economic inequities, needs of the underserved communities, and environmental justice. Reclamation is establishing and rebuilding water infrastructure for underserved populations by ensuring that clean drinking water is reliably provided to communities.

I, again, thank the subcommittee and I am happy to answer any questions.

[The information follows:]



IN REPLY REFER TO:

United States Department of the Interior

BUREAU OF RECLAMATION
Washington, D.C. 20240

**Statement of David Palumbo, Acting Commissioner
U.S. Bureau of Reclamation
Before the
Subcommittee on Energy and Water Development
Committee on Appropriations
U.S. House of Representatives
on the President's Fiscal Year 2023 Budget
April 27, 2022**

Thank you, Chairwoman Kaptur, Ranking Member Simpson, and members of the Subcommittee for the opportunity to discuss with you the President's Fiscal Year (FY) 2023 Budget for the Bureau of Reclamation. I am David Palumbo, Acting Commissioner for the Bureau of Reclamation.

The Bureau of Reclamation is the largest supplier and manager of water and the second largest producer of hydroelectric power in the Nation. Reclamation manages water for agriculture, municipal and industrial use, the environment, and provides flood control and recreation for millions of people. Reclamation's activities, including recreation benefits, support economic activity valued at \$66.6 billion, and support approximately 472,000 jobs. Reclamation delivers 10 trillion gallons of water to more than 31 million people each year and provides water for irrigation of 10 million farmland acres, which yields approximately 25 percent of the Nation's fruit and nut crops, and 60 percent of the vegetable harvest.

Reclamation's fundamental mission and programs – modernizing and maintaining infrastructure, conserving natural resources, using science and research to inform decision-making, serving underserved populations, and staying as nimble as possible in response to the requirements of drought and a changing climate – position it as an exemplar for the Biden-Harris Administration's core tenets. The Bureau of Reclamation's FY 2023 budget provides the foundation to meet our mission, and to manage, develop, and protect water resources, consistent with applicable State and Federal law, and in a cost-effective and environmentally responsible manner in the interest of the American public. Reclamation remains committed to working with a wide range of stakeholders, including water and power customers, Tribes, State and local officials, and non-governmental organizations, to meet its mission.

Reclamation is requesting a total of \$1,414,225,000 in Federal gross discretionary appropriations. Of the discretionary total, \$1,270,376,000 is for the Water and Related Resources account, which is Reclamation's largest account, \$65,079,000 is for the Policy and Administration account, and \$33,000,000 is for the California Bay Delta account. A total of \$45,770,000 is budgeted for the Central Valley Project Restoration Fund, to be offset by expected discretionary receipts in the amounts collected during the fiscal year. These appropriations will complement the funding

Reclamation received from the Bipartisan Infrastructure Law, which is allocated pursuant to statute in the amount of \$1.66 billion in FY 2023. Following are some focus areas and highlights of Reclamation's FY 2023 Budget request.

Racial and Economic Equity: Activities to Support Underserved Communities, Tribal Programs & Tribal Water Rights Settlements: Reclamation advances racial equity and assistance to underserved communities through investments in Tribal water rights settlements, continuation of the Native American Affairs technical assistance program, rural water projects, and investments in specific projects for underserved communities. The Bipartisan Infrastructure Law also invests very substantial portions of its funding to underserved populations and Tribal communities as described later in my testimony.

The FY 2023 discretionary request includes \$20.0 million for the Native American Affairs program to work with and support Tribes in the resolution of their water rights claims and to develop sustainable water sharing agreements and build Tribal technical capacity. This funding will also strengthen Department-wide capabilities to achieve an integrated and systematic approach to Indian water rights negotiations to consider the full range of economic, legal, and technical attributes of proposed settlements. Finally, funding also supports Reclamation efforts for Tribal nations by supporting many activities across the Bureau, including rural water projects, the Yakima River Basin Water Enhancement Project, activities of the Klamath Project, and the Lahontan Basin project, among others.

Conservation and Climate Resilience: Reclamation's projects address the Administration's priorities for conservation and climate resilience through funding for the WaterSMART program, funding to secure water supplies to wildlife refuges, and funding for proactive efforts through providing sound climate science, research and development, water security, drought resilience, and clean energy.

The WaterSMART Program serves as the primary contributor to Reclamation's/Interior's Water Conservation Priority Goal. Since 2010, projects funded under the Water Conservation Program, including WaterSMART Grants, Title XVI (Water Recycling and Reuse Program), California Bay-Delta Program, Yakima River Basin Water Enhancement Project, and the Desalination construction program are expected to achieve more than 1.4 million acre-feet of water savings each year once completed.

Through WaterSMART, Reclamation works cooperatively with States, Tribes, and local entities as they plan for and implement actions to address current and future water shortages, including drought; degraded water quality; increased demands for water and energy from growing populations; environmental water requirements; and the potential for decreased water supply availability due to climate change, drought, population growth, and necessary water requirements for environmental values. This includes cost-shared grants for water management improvement projects; watershed resilience projects; the Basin Study Program; and drought planning and implementation actions to proactively address water shortages. The FY 2023 request includes \$62.4 million for the WaterSMART Program.

Climate Science: Reclamation's FY 2023 budget for Research and Development (R&D) programs includes \$25.3 million for both Science and Technology, and Desalination and Water Purification Research—both of which focus on Reclamation's mission of water and power deliveries. Climate change adaptation is a focus of Reclamation's R&D programs, which produce climate change

science, information and tools that benefit adaptation, and by yielding climate-resilient solutions to benefit management of water infrastructure, hydropower, environmental compliance, and water management.

The Desalination and Water Purification Research program addresses drought and water scarcity impacts caused by climate change by investing in desalination and water treatment technology development and demonstrations for the purpose of more effectively converting unusable waters to useable water supplies. The Science and Technology program invests in innovation to address the full range of technical issues confronting Reclamation water and hydropower managers, including the Snow Water Supply Forecasting Program that aims to improve water supply forecasts through enhanced snow monitoring and water management to address the impacts of drought and a changing climate.

Modernizing and Maintaining Infrastructure: Reclamation's water and power projects throughout the western United States provide water supplies for agricultural, municipal, and industrial purposes. Reclamation's projects also produce hydropower and maintain ecosystems that support fish and wildlife, hunting, fishing, and other recreation, and strengthen rural economies.

Dam Safety: Reclamation manages 487 dams throughout the 17 Western States. Reclamation's Dam Safety Program has identified 360 high and significant hazard dams. Through constant monitoring and assessment, Reclamation strives to achieve the best use of its limited resources to ensure dam safety and maintain our ability to store and divert water and to generate hydropower. Although some pending infrastructure priorities will be addressed through the Bipartisan Infrastructure Law, additional priorities exist and the FY 2023 budget request includes \$210.2 million for the Dam Safety Program.

The Dam Safety Program helps ensure the safety and reliability of Reclamation dams to protect the downstream public. Approximately 50 percent of Reclamation's dams were built between 1900 and 1950, and approximately 90 percent of the dams were built before adoption of currently used, state-of-the-art design and construction practices. Reclamation continuously evaluates dams and monitors performance to ensure that risks do not exceed the Federal Guidelines for Dam Safety Risk Management and the Public Protection Guidelines. The Dam Safety Program represents a major funding need over the next 10 years, driven largely by necessary repairs at B.F. Sisk Dam in California. The B.F. Sisk Dam is a key component of the Central Valley Project and California's State Water Project, providing 2 million acre-feet of State and Federal water storage south of the California Sacramento-San Joaquin River Delta. Reclamation is modifying the dam to reduce the risk of potential failure resulting from potential overtopping in response to a seismic event, using the most current science and technology to develop an adaptive and resilient infrastructure. In addition to B.F. Sisk, Reclamation has identified 19 additional projects with anticipated modification needs through 2030.

The budget also requests \$96 million for specific Extraordinary Maintenance (XM) activities across Reclamation in FY 2023. This request is central to mission objectives of operating and maintaining projects to ensure delivery of water and power benefits. Reclamation's XM request relies on condition assessments, condition/performance metrics, technological research and deployment, and strategic collaboration to better inform and improve the management of its assets and deal with its infrastructure maintenance challenges.

Renewable Energy: Reclamation owns 78 hydroelectric power plants. Reclamation operates 53 of those plants to generate approximately 15 percent of the hydroelectric power produced in the United States. Each year on average, Reclamation generates about 40 million megawatt hours of electricity and collects over \$1.0 billion in gross power revenues for the Federal Government.

Reclamation's FY 2023 budget request includes \$5 million to increase Reclamation's hydropower capabilities and revenue from existing public infrastructure and reduce project operating costs (e.g., water and power delivery costs). Revenues derived from hydropower production are invested in the underlying public infrastructure to ensure continued, reliable operations and benefits.

Section 70101 of the Bipartisan Infrastructure Law established the Indian Water Rights Settlement Completion Fund (Completion Fund), making \$2.5 billion available to the Secretary of the Interior to satisfy Tribal settlement obligations as authorized by Congress prior to enactment of the Bipartisan Infrastructure Law. The Department allocated \$1.7 billion of those funds in FY 2022, \$355 million of which supported Reclamation's Tribal settlement implementation actions, and additional funding will be allocated in FY 2023. In addition to the Completion Fund, FY 2023 represents the fourth year of Reclamation Water Settlements Fund allocations, which provide \$120 million in annual mandatory authority for Reclamation Indian water rights settlements. Funding made available by previous mandatory authorities, such as that authorized in the Claims Resolution Act, remain available for settlement implementation, while the ongoing operations and maintenance requirements of the Arizona Water Settlement Act are expected to continue to be supported within the Lower Colorado River Basin Development Fund. In FY 2023, the Department of the Interior is requesting \$34 million for ongoing operational requirements for existing settlements to be added in the Completion Fund and the Administration is interested in working with Congress on an approach to provide a mandatory funding source for future settlements. Additional information can be found in the Permanents chapter of the Reclamation request.

The investments described in Reclamation's FY 2023 budget, in combination with the Bipartisan Infrastructure Law implementation and prior year efforts, will ensure that Reclamation can continue to provide reliable water and power to the American West.

Water management, improving and modernizing infrastructure, using sound science to support critical decision-making, finding opportunities to expand capacity, reducing conflict, and meeting environmental responsibilities were all addressed in the formulation of the FY 2023 budget. Reclamation continues to look at ways to plan more efficiently for future challenges faced in water resources management and to improve the way it does business.

Thank you for the opportunity to summarize the President's FY 2023 Budget Request for the Bureau of Reclamation.

Ms. KAPTUR. Thank you very much, Mr. Palumbo for your statement. Please let me remind members and witnesses that the 5-minute clock still applies. If there is a technology issue, we will move to the next member until the issue is resolved and you will retain the balance of your time. You will notice a clock either on your screen or in this room that will show how much time is remaining. At 1 minute remaining, the Zoom clock will turn to yellow. At 30 seconds, I will gently tap the gavel to remind members that their time is almost expired and when your time has expired, I will begin to recognize the next member.

In terms of the speaking order, we will generally follow the order as we did in our first hearings, beginning with the chair and ranking member. I'll recognize members present at the time the hearing is called to order, recognized in order of seniority and finding members arriving after gavel by order of arrival.

Additional rounds of questions may occur after all members have an opportunity for a first round. We will now begin questioning under normal rules.

I will ask the first question of General Spellmon, and this relates to Brandon Road and the Asian carp. The invasive Asian carp is very important to the Great Lakes region, as you know. Great Lakes is home to a multibillion-dollar fishery which is native and will be destroyed if the invasive Asian carp reaches our lakes, and it is on its way.

I have to say I am very pleased that the Brandon Road Lock and Dam Project is moving forward to address this issue. Along with our Great Lakes colleagues, I want to thank the Corps for including funding for the fiscal year 2022 budget for completing the PED and providing \$226 million in the Infrastructure Investment and Jobs Act to initiate construction.

I am also very pleased that the fiscal year 2023 budget request includes \$48 million to continue this important effort. General Spellmon, can you please provide us with an update on the status of this project?

General SPELLMON. Yes, ma'am. First, we want to thank Congress for the authorization of Brandon Roads and WORDA 2020 and greatly appreciate the \$225 million in the IIJA.

So, we are moving forward with preliminary engineering and design. We will complete what we can fund in PED in the September timeframe with the existing funds that we have. Beyond September, we have to delve into the IIJA funds that were provided. To use those funds, we need to enter into a Project Partnership Agreement with our non-Federal sponsors. There are three things, all related, that are holding up that agreement, ma'am.

First, is a potential WORDA provision that would provide for a hundred percent Federal expense of the Brandon Roads Project. So, that is out there with Illinois and the Great Lakes states. Secondly, is certainly Illinois' desire to have more of the Great Lakes states sign on as project sponsors. And then finally, Illinois does have some concerns with long-term O&M responsibility.

So, we will continue on with preliminary engineering and design through September, ma'am, and then we hope to have more visibility on the way ahead for the Project Partnership Agreement as we get closer to a WORDA bill.

Ms. KAPTUR. Well, I just say to my colleagues in the West, I don't know where this fish is headed, but if you think about the zebra and quagga mussels that are now moving into the water systems of the West, you will get a sense of what has happened to us as these invasive species come into our country by different means, and then they just spread.

And for us, it is a 16- to \$18 billion fishery just in Lake Erie that is at risk and it is really frightening.

I know that you work with the Fish and Wildlife Service and there are a lot of fishing contracts. I would be very grateful to have pre-notice of when you announce that you might be doing the fishing contracts because they are trying to fish these things out as they come up the Mississippi, and so that we can make those available to stakeholders across the Great Lakes who are all very worried and sometimes don't follow the announcements of the Federal Government.

But that is an important part of the beginning of a solution to getting rid of these things, if that can ever be done.

In the interest of time, I will hold my questions until a second round. I would like to now turn to our ranking member for any questions he may have.

Mr. SIMPSON. Thank you, Chairwoman Kaptur. I am going to list several questions, and you don't have to answer them here, but they are going to be submitted so that that you can—you probably have answers for them, but in the interest of time, you know, you can tell how interested people are in this hearing because all members are here or on video. But most members are here in person.

You mentioned, Mr. Connor, about disadvantaged community, 40 percent going to disadvantaged communities. Could you give me a definition in writing; what do you consider a disadvantaged community and is that government-wide or is it specific for this program? So, just give us one of those.

The other thing is the Little Wood River/Gooding Wall Project. I have been working on that for 24 years, ever since I have been in Congress. I would like to see it completed before I die. And a lot of people in Gooding would like to see it completed before they die, also. Work with us and get that done. Let us move that forward.

Waters of the United States has always been one of those things that have been tossed back and forth between different administrations and so forth. Right now, there is a case, the Sackett case. You don't plan on writing a new—I hope you don't plan on writing a new rule for Waters of the United States before the Sackett case is decided. Let us see if we can hold out until that—see how that case turns out before we write a new rule. And I would appreciate your answer to that and we will do that in writing. If you plan on writing a new rule, I would like to know why you are doing it now.

The Indian water rights settlements that you mentioned, you are going to go in this budget from discretionary spending to mandatory spending. Mandatory spending doesn't have necessarily a level. So, I would like to know—and I believe that the Bureau of Reclamation, the Indian water rights is a priority with them as it is with many of us.

I would like to know why moving it to mandatory is the right thing to do and what that does in terms of placing Indian water rights on a priority list and the importance of it within the Bureau.

One of the other questions that I am going to have is the steps that you are taking to ensure that the projects are completed or advanced efficiently and effectively. And how are you dealing with ensuring good cost estimates in this environment of increasing inflation and stuff and the impact that is having on you? And are we putting enough money in the management reserve, is that sufficient, or should more money be placed in the management reserve and should have we made more cautious decisions on that?

And along that same line is we chose to allocate in the infrastructure bill money that went to start, but not complete, several sizable projects. And I recognize that that choice was allowed under the text of the law, but I am concerned about the implications of the decisions on future years' appropriation needs.

What outyear impacts should this committee be looking at down the years as we try to finish these major projects that we will start with the infrastructure money? And more importantly, are other agencies in the Federal Government, I am talking about one particular that starts with three letters, O-M-B, are they committed to requesting the money to finish these projects that we are starting under that?

And one other thing with the Bureau that I would like a response to, and I just heard of this today, that there have been some issues that have risen with the American Falls Spillway Project there, and what we are doing. I'd like to be briefed on that when you find out the information there to make sure that the space holders are not going to have increased cost placed on them.

So, I appreciate that. I really do appreciate the work that you all do as I know everyone on this committee does. And I know that every time I have called either the Corps or the Bureau and asked them for their help or raised problems that members have come to me with, you have been most responsive in trying to address those concerns and I truly appreciate that. Thank you. Yield back.

Ms. KAPTUR. Thank you, Ranking Member. Ranking member of the full committee, Congresswoman Granger.

Ms. GRANGER. Secretary Connor, the Calhoun Port Authority has proposed fully funding the Matagorda Ship Channels expansion project. Oh, thank you, sorry. This project could be completed without another dime of Federal funding, yet the request has been stuck since last summer. Could you tell me when this project will be approved?

Mr. CONNOR. Thank you, Ranking Member Granger, for the question. I did meet with the Port Authority officials within the last month and I am cognizant of their timeframe for when they want to let a contract out to do the enhancements that need to be done at the port. I do recognize the importance with respect to the commodities that they export through that facility, both in the agricultural and the energy sectors, as well as the dangerous nature of that particular channel.

So, it is on our priority list to evaluate that. We are finishing up our pre-construction and engineering design work related to the project and that includes monitoring, because there is some concern

with some of the sediments and the contamination. So, when we get the monitoring plan done, then we can move forward with the Advanced Funds Agreement. So, knowing that they want an answer within the next couple months, we will be working on that timeframe to get that answer.

Ms. GRANGER. Okay, thank you. I have another question, but I will wait until the next round.

Ms. KAPTUR. Congresswoman Kirkpatrick.

Mrs. KIRKPATRICK. Thank you, Madam Chair and Ranking Member. Good afternoon. It is great to be back here in this room. Today's hearing is especially important to me because we get an opportunity to discuss our precious water supply. A lot sure has changed in the last few years here, but the drought we are facing in Arizona has been a constant, hasn't it?

In all seriousness, the Colorado River provides water to approximately 40 million people and 5.5 million acres of irrigated agriculture across all seven basin states: Colorado, New Mexico, Utah, Wyoming, California, Nevada, and, of course, Arizona.

Since 2000, or for over 20 years, the basin has experienced historically dry conditions. The seven basin states and key water agencies, such as yours, have worked together over the past quarter century to better manage and share the waters of the Colorado River. We are seeing historically low levels of water supply in Lake Powell. So low, in fact, that we are facing the real possibility of Lake Powell reaching a minimum power pool which would severely impact our capability to generate hydropower.

So, my questions are for Deputy Commissioner Palumbo and Assistant Secretary Trujillo. I am going to ask my questions en bloc, but you can answer them as you wish. How close are we to reaching this critically low level of water in Lake Powell? What is Reclamation doing to both prepare for these drastically low water levels and prevent a loss in our hydropower capabilities along the Colorado River? And lastly, what additional resources does Reclamation need to prevent or mitigate these drought effects? Can you use drought mitigation funding to address that? We will start with Deputy Commissioner Palumbo.

Mr. PALUMBO. Thank you very much, Congresswoman. You hit it on the head. There is significant and expansive drought in the American West in the Colorado River Basin. With respect to reaching those critically low elevations that you mentioned in Lake Powell, that elevation is 3,490 feet. Today we are at 3,522, so 32 feet above that level, not much head room, so to speak, to play with.

So, what we are doing is looking at a couple different opportunities to shore up that elevation. One of which is bringing some water down from upper reservoirs to shore up the elevation and, two, holding back some water from releasing downstream to shore up that elevation. So, we are working with all seven basin states. We are working with the country of Mexico. We are working with the 30 tribes in the Colorado River Basin to make that happen.

With respect to what are we doing, generally speaking, we are trying to be very supply-smart. How much can we reasonably expect, and then matching demands with those supplies. Looking at opportunities for conservation, looking at opportunities for increased storage such as the Verde River Project in Arizona, and

then looking for new opportunities through our Water Reuse Program under Title 16, and our Desalination Program. All those are in play right now.

The last question with respect to funding, all those things I mentioned could always benefit from additional funding should the subcommittee wish to provide that to Reclamation and that could be put to beneficial use.

Mrs. KIRKPATRICK. Thank you. Now, Assistant Secretary Trujillo, can you also address those questions?

Ms. TRUJILLO. Yes, ma'am. Thank you, Representative Kilpatrick. We think about these issues on a daily basis. Mr. Palumbo did an excellent job of characterizing all of our ongoing work. I would add that we are working very closely with your constituents in Arizona and in all the other basin states and in with our partners in Mexico. We have a team in Mexico today talking about these exact same issues.

I would also highlight, maybe just to supplement, that we work closely with our Federal partners as well. So, we have agency partners in NOAA and the Corps of Engineers, in the Department of Agriculture that we are trying to work proactively to use our resources in complementary ways. And that is what is going to get us through this drought and we appreciate the support from Congress on these issues.

Mrs. KIRKPATRICK. Again, thank you very much. And I yield back.

Ms. KAPTUR. Thank you very much, Congresswoman. Now, we will move to a member that has been with us from the very beginning, but on virtual, Congresswoman Bustos of Illinois.

Mrs. BUSTOS. All right. Thank you, Madam Chair. I certainly appreciate the opportunity to be here, and thank you to our Ranking Member as well. I am going to address my questions to Secretary Connor and also to General Spellmon, so just a heads up on that.

But let me start out by saying thank you very much for providing \$829 million to kick off construction within the Navigation Ecosystem Sustainability Program. We all know it as NESP. So, what this will do is allow the long overdue and critical work of updating our inland waterway infrastructure on the upper Mississippi and Illinois waterways, so we can finally begin that.

The funding from the Bipartisan Infrastructure Law will completely, completely cover updates to Lock and Dam 25 and will also provide ecosystem restoration upriver from that. And, you know, I look back on when we started working on this and it was literally 3 months into when I was first elected to office more than 9 years ago. And so, obviously, we are going to keep going. We have more work to do. We still have six locks to construct through NESP and hundreds of ecosystem projects.

And so, we know that continual progress will absolutely be critical as we take a look at the Infrastructure Bill funding. So, the next lock that is slated for updates is LaGrange. And it is the busiest lock on the Illinois waterway and one of the busiest locks authorized in NESP.

So, my questions to both of you, and you can go with whatever order makes sense, but what is the capability dollar amount of LaGrange today? And if you received all of that in fiscal year 2023,

how would you invest it to improve capacity and safety at LaGrange?

General SPELLMON. Ma'am, this is General Spellmon. First, in addition to the \$829 million you mentioned in the Jobs Act, the '22 appropriations also gave us another 45 million. So, much of that funding is going to be used for Lock 14 mooring cell construction, multiple ecosystem projects that you mentioned. But for LaGrange, it is going to advance the design for that 1,200-foot lock.

We are not, as an agency, reporting any additional capability for NESP for '23, just given the generous appropriations that we received in the Jobs Act and in the 22 appropriations.

Mrs. BUSTOS. And, Mr. Secretary, anything else to add to that?

Mr. CONNOR. I would just add, beyond the specifics of LaGrange and NESP, I just want to put in a plug for the Illinois waterway system as a whole. As you know, but I just want to say it out loud here, these investments are incredibly valuable to make safer, more reliable, and, quite frankly, more environmentally friendly transport of cargo and improve our supply chain. So, we are very enthusiastic about the investments we are making in NESP. It is an indication of what we can do from both an infrastructure and an environmental standpoint. We are moving those agendas in parallel and we are going to improve the efficiency by which we can move goods in this country. It is a very exciting part of the portfolio and long overdue to make these investments.

Mrs. BUSTOS. Absolutely. We are really excited about it.

Let me just mention one other thing and then I will yield back to the chair. But in December of 2019, the Corps announced that there were two locks, the T.J. O'Brien and the Lockport locks, that would be moved from the Rock Island district, which is in the congressional district that where I live and that I represent.

The oversight of those would be moved to the Chicago district with a third lock, Brandon Road, to be transferred also after the completion of the significant work being done there. So, while I share concerns with stakeholder groups about what I considered really the lack of transparency about that decision. You know, I ultimately understood and supported the goals of maintaining a sustainable workload for both of the districts. But I just wanted to quickly let you know that I am so glad to hear that the Corps has decided against transferring two additional locks from the Rock Island District to the Chicago District. The way I look at it, is losing more locks from the Rock Island District would threaten the long-term sustainability of the Rock Island District, which is obviously something that is very, very important to the people in the region that I represent.

So I just want to say thank you for the decision.

And, with that, Madam Chair, I will yield back any remaining time that I have.

Ms. KAPTUR. Thank you very much, congresswoman.

I just love this committee. I just—you don't even know how good you are.

So we go from the heartland, now we are going out to California, we're representative geographically, intellectually this is just really a great committee.

So go ahead, Congressman Calvert.

Mr. CALVERT. Well, good afternoon. Thank you to all the witnesses for being here. I think I have run into a few of you over the years since I have been here for a while.

General Spellmon, I appreciate your engagement on the Marietta Creek Project in my district. It is a shame it took so long to get where we are at, but thanks to your team's engagement we finally have an operations and maintenance manual for the completed phases of the project. So we are making some progress.

I also appreciate the Corps working with me to treat 2B as shovel ready. I want to work with you to find opportunities to move construction of 2B forward while remaining phases of the project are reevaluated.

One issue I want to talk about, General, is the recent developments have caused the Corps to rethink how it approaches flood plain management. Historically, in the Prado Basin we have been able to improve economic development projects above elevations 566. But recently these projects have been facing challenges related to litigation stemming from Hurricane Harvey in Texas.

One of my concerns is that the Corps policy has not been updated to reflect the evolving landscape. So when project proponent rely on policy and regulations that are on the books, they run into an unanticipated wall at the end of an approval process. There is no planning for a black swan event and we need to draw the line someplace. How do we balance reasonable risk and the significant economic development these projects in my region will deliver? And, finally, how is the Corps determining the application of these new unwritten considerations for approving projects?

General SPELLMON. Sir, you are correct. We have a lot of work to do to update our guidelines for project of these nature. I would just, sir, go back to Ms. Kaptur's opening comment, what—and this is all highlighted in National Climate Assessment. What used to be a 100 year event is no longer the case. So you mentioned Addicks and Barker. When we designed that and built that back in the 1940s, no one ever anticipated 60 inches of rainfall in the City of Houston nor the expansion of the city out there today.

Sir, I am committed to working with you. I am familiar with the project that you are referring. Our, of course, interest is in life safety and we are ready to work with you on a way forward. But we have got to keep in mind that the climate is changing and it is very well documented and life safety is going to be paramount in all of our decisions.

Mr. CALVERT. Yeah. I hope we take a good look at that, because at what point—where do you draw the line? Reasonable risk is reasonable risk, but is it 100-year storm, 500-year storm, 1,000-year storm?

So at that point, no one has any confidence to make any kind of responsible risk. And, as you know, decisions have been made years ago on acquiring property in—not just here in California, but—in my state of California, but other places based upon what was the rules and regulations at that time. And so there's a lot of uncertainty out there, and so that needs to be cleared up as soon as possible.

Yes, Mr. Secretary, you wanted?

Mr. CONNOR. If I could just add real quickly, I think, as the General has noted, we do have a responsibility to constantly reassess risk and make sure we have the scientific tools to do that. And I know General Spellmon has been a very strong advocate for increasing the resources we have for R & D.

I would also like to say, you know, whether it is Prado or other basins, we are pushed by partners and stakeholders to reassess risk. And in some cases, like in the Prado situation, we reevaluate how we make releases. And this was not an easy process. But so we could accommodate Orange County Water District's ability to take those flood flows and use them in their recharge basins for ground water. That is a great result. That is what we should be doing. Sometimes we need to be pushed by our partners to do that. So it is the right combination of us having tools, us thinking through how we can do that, and our partners pushing us.

Mr. CALVERT. Thank you.

And just a quick comment on the Colorado River. Obviously we have a historic drought and we are going to be very concerned about how that is managed and how these—you know, obviously it was mentioned that Lake Powell and of course Lake Mead and the significant management problems that—not just for California, but obviously Nevada, Arizona, and the entire southwest. And so hopefully there is a good communication on how that is going to take place, because—you know, God help us, we get some rain next year, but in the meantime we are going to have to figure out how we manage our way out of that problem.

With that, Madam Chairman, I yield back.

Ms. KAPTUR. Thank you very much, Congressman Calvert. You raise important issues. When one looks at this map of the country, the drought issues are extremely severe, and then of course the wet weather issues in other parts of the country.

And I am going to turn to another member in just a second, but I think a question that I have, I would like to put on the record now deals with the weather changes around the country. And very pleased to see that the FY '23 budget request includes funding to continue studies, such as the Great Lakes Coastal Resiliency Study. And I think I may be the only city and land planner in Congress, although I know Congresswoman Lee has some background in that as well. I would ask each member of the committee to think about people you may know in your part of the country who are especially good at regional planning incorporating environmental issues such as this, because the country has to think in a different way as we move forward in this 21st century and many of the skills we need aren't necessarily possessed by those who are sitting here. We know different pieces of the problem, but as we try to solve infrastructure issues, the question becomes, you know, where are those corridors, how do we do—whether it is water, whether it is roadways, whether it is coastal resilience, how is it that we plan for somewhat of an unpredictable future, but one that we know will be a little different than the past.

And so if I think of one name, for instance, from the Great Lakes, I think of a person like Dan Egan, who wrote "The Death and Life of the Great Lakes". He has special insight on the disappearing plankton in our fresh water systems. And that influ-

ences the way we think about what we do in our region. Those who come from the west, you have your personal knowledge and you know of people who think about this. Those of you who come from the south and the flooding, those who come from the Everglades. I mean this is an incredible committee. And I think if you could help us as we move forward in this session of Congress to think about people you may know that we could put in a room or on a zoom and talk about ways in which we think about watershed planning, sub-watershed planning. I just got a great idea from somebody back home who said, Marcy, you have got to go work with the cemeteries because they have got room to hold wetland water in order—I said I never thought about the cemeteries, I have been thinking about parks. And so in any case, depending on the part of the country we live in, the sub-watershed maps, the sub-sub-watershed maps, some of the data that you possess and that Department of Agriculture possesses become even more important to us, but we have to somehow put it together to think about systems of management.

So I just wanted to put that on the record and ask, General, how is the Corps working with local communities and stakeholders on a region wide approach to planning and climate resilience within your efforts?

General SPELLMON. Yes, ma'am.

So we are hearing two things from communities on this front. First, they want to see more innovation from the Corps and, as the Secretary said, we are working very hard to make an argument to increase some of our research and development investments in select areas.

And then secondly, we are hearing from communities they want us to tackle these problems with less concrete and steel and more natural and nature based features.

So this is really a two-part conversation. We are having to educate some of our sponsors on what—the limitations of natural and nature based features and where they can work and also where they need to be augmented by concrete and steel. But also, we have got to take the opportunity—I command 38,000 civil engineers, we have got to take the opportunity to listen more to our local communities. And so we are dedicated to that, we are committed to it.

But if I had to give you the two things we are hearing most from communities we work with, it would be those two, ma'am.

Ms. KAPTUR. Very interesting. Thank you so much.

I now would like to call on Congresswoman Susie Lee of Nevada.

Ms. LEE. Thank you, Madam Chair, thank you Ranking Member Simpson.

And I think Congressman Calvert opened the floor for what I am sure you all are expecting me to talk about, which is the worst drought in 12 centuries that we are experiencing in the west. As we all know, Lake Mead supplies 25 million people with water in Nevada, Arizona, and California and it is at its current level—at the lowest level it has been since it was built. You know, we have all been sounding the alarm bells for a very, very long time now and it is getting quite disturbing and it is now at an emergency scenario.

And so, you know, we are not doing nearly enough of what we need to be doing to address this. I think it is just the nature of climate change and the impact we are feeling across the county.

But, Mr. Palumbo, your testimony highlighted several key funding streams that we have fought for and delivered, including \$8.3 billion in investment in water infrastructure in the west via the infrastructure bill, as well as increased funding for programs like the WaterSMART program, which has been very impactful in my community. In addition to the release of spend plans, can you share with this committee the concrete steps that we can expect the Bureau to take in the coming months to ensure expedient delivery of these critical water management funds?

Mr. PALUMBO. Thank you very much, Congresswoman.

We have a variety of funding opportunities being issued in the summer to put that money to work under BIL as quickly as possible. We hired several employees to ensure that when those applications come in they can be turned around and then implemented on the ground.

Specific to the Colorado River Basin, we are looking at opportunities for more conservation. We have divided this issue that we are facing into a crisis that we have today, getting those tourniquets put on, and then our long-term planning, what we are going to do for the long-term. So some of these grants on conservation will help with those tourniquets and then some of the grants will also help towards that long-term planning effort to match supplies and demands in the future.

Ms. LEE. So in hiring these employees, are you feeling like you are going to be able to do it in time? Are there barriers to being able to do that?

Mr. PALUMBO. Right. I think we are very confident we have got the right folks on board now to help turn that money around expeditiously. Everybody understands the charge of getting, these tourniquets on as quickly as possible, shoring up those elevations, implementing this 500+ Plan, which you may have heard about, implementing other measures to shore up elevations in both reservoirs. And we believe we have got the right staff on board to do that.

Ms. LEE. Great. Thank you.

Assistant Secretary Trujillo, good to see you again. In your testimony you discussed the need for additional funding to implement drought contingency plans and improve water levels at Lake Mead. And I wholeheartedly agree.

I worked to pass the Colorado Drought Contingency Plan in 2019, as well as secure funding for large scale recycling projects as part of the infrastructure bill. Nevada and the Colorado River Basin states have made smart investments to better manage and monitor their water, but as we know, we still have a long way to go and not enough time.

Can you comment on what additional strategies you think should be deployed by the Federal Government as we begin negotiations for the 2026 renewal of the Colorado River Guidelines.

Ms. TRUJILLO. Thank you, Representative Lee.

As I mentioned in my opening, this is an issue that we are very focused on right now. Colorado River issues are something we work

on every day. We are working not only in the short-term, but also thinking about the longer-term measures. And we do have a good track record to build from.

So for the past 20 years we have been thinking about proactive measures and programs that we can implement to conserve water, better manage and better balance the system based on the available supply that we have. That is exactly the kind of foundation that we are going to be building from.

Right now, I am leading an effort at the Department to work closely with the tribal representatives and basin state representatives to think about what we can do now to bring more water down into Lake Powell to protect that system and also protect the system in the lower basin as well. The next round of guidelines is something that we are also thinking about in addition to the short-term measures. And we are going to be working on a pre-scoping process for that to be kicked off later this year.

Ms. LEE. Great. Thank you.

And, with that, I yield the—

Ms. KAPTUR. Thank you very much, Congresswoman Lee.

Congressman Fleischmann—

Mr. FLEISCHMANN. Thank you.

Ms. KAPTUR [continuing]. Of Tennessee.

Mr. FLEISCHMANN. Yes, ma'am. Thank you, Madam Chair—is a privilege to serve on the committee—Ranking Member Simpson.

To the witnesses, thank you so much. I do represent the third district of Tennessee, largest city is Chattanooga.

General Spellmon, a note of thanks to you personally. You have visited the Chickamauga Lock. I have called you and you have been very responsive. But the Nashville district, from bottom all the way up to the chain of the command when we have had issues has been very responsive and has worked on this. So thank you very much, sir. Appreciate this.

Would like to talk a little bit about Chickamauga. In recent years, Congress has provided robust funding for Chick Lock and other ongoing projects within the Inland Waterway System. I am very grateful for the tremendous progress that is being made.

My question, sir, is do you believe current funding is adequate to complete the project or will additional funding be needed at some point down the road?

General SPELLMON. Sir, today, currently, we have what we need to finish.

Mr. FLEISCHMANN. Great.

In regard to the contracts, and there have been several that are on the lock project, am I correct in assuming that at this time all options of the contract have been exercised? And if not, can you address any of the time frame of process for exercising the remaining options, sir?

General SPELLMON. Yes, sir. Sir, I will get you that answer. I don't know the details on the options. I do want to report since our last visit, our contractor who had—we have been having some challenges—9,500 cubic yards of placement in March and we are on track for another very good month.

Mr. FLEISCHMANN. Thank you, sir. That is wonderful. Excellent.

One final question, if I may. I would like to gain a better understanding of the Corps' process in dealing with the challenging circumstances created by Covid to complete these kind of large infrastructure projects, sir.

General SPELLMON. Yes, sir. So not all of these are contract specific. I will tell you, we are absolutely committed to being open and transparent with you, sir, members of Congress, and our contractors who worked through this unprecedented challenge.

Mr. FLEISCHMANN. Thank you, sir. Appreciate all of you all.

Madam Chair, I yield back.

Ms. KAPTUR. Thank you very much, congressman.

Congresswoman Frankel from Florida, the Everglades.

Ms. FRANKEL. Hello. Thank you, Madam Chair. And thank you to our panelists.

I just met with our folks from Jacksonville. Very good group. And I didn't get to go through all my issues with them, but most of them.

But first I want to just start with some questions of some of the testimony today.

I think it was you, Mr. Connor, that you talked about some resiliency projects for south Florida. Could you give me some examples of what you are thinking about?

Mr. CONNOR. I think the entire south Florida ecosystem restoration program is a resiliency program. I think it is much larger than Everglades restoration. It is addressing the needs on both coasts, it is addressing water supply challenges that are arising because of sea level rise and salt water intrusion, and plus the overall ecosystem restoration aspect. So all of the different aspects of the program, CEPP south, CEPP north, new projects, and the ones on both sides of the coast in limiting, you know, the pollutants falling into those coastlines I think are all part of the resilience agenda. I don't think there is any single project that is more indicative of trying to meet the whole array of challenges, particularly from a climate perspective, than the south Florida ecosystem restoration program.

Ms. FRANKEL. Okay. Thank you.

And we are of course very pleased with the infrastructure money, the \$1 billion to—oh, more than \$1 billion to Everglades restoration and then the budget request from last year, which we funded and then this year. I think it is over \$400 million. Thank you for that request.

Before I talk a little bit about that, some of the water issues. One of the things that the folks from Jacksonville told me today is that their district, Jacksonville, has the biggest backlog of permits in the entire country. So I didn't know whether you were aware of that, but I wanted to—yes, Army Corps I am talking to—yes, whether you are aware of that and whether you have plans to try to help them out there?

General SPELLMON. Ma'am, so the state is helping us out. As you know, with Florida's assumption of the 404 Program, that backlog will be coming down significantly.

Ms. FRANKEL. Okay. Thank you.

And then to the controversy—it seems like it is always a controversy—the Lake Okeechobee System Operating Manual. I am

sure, Lieutenant General, that you are familiar with that. Just for the folks who are not, you know, both the quality and amount of water in south Florida is so important. Different groups. You have for the city and the county, you know, they are concerned about their drinking water, and the farmers are concerned about having enough water for their crops. And, of course, the environmental. So everybody is concerned about having clean water as well as enough water.

When I was mayor of my city, West Palm Beach, we had a horrendous drought and literally came within weeks of not having any water. And so my current mayor is constantly with the calls and the letters just to make sure that the system that you set up is sensitive to everybody's interests, without politics. That's why I always say, well, here I am spewing this, but I am not going to tell you what to do other than to say please don't let politics get in the way, because I know there are other members of Congress that yell louder than some other members of Congress, especially about the algae. Well, we don't want algae obviously, but to have your policies and the schedule be based on science.

General SPELLMON. And law, ma'am.

So the '44 Flood Control Act is very clear, as is the '58 Water Supply Act. If the state issues a water right, a water appropriation to a given entity, a given county, we have to make sure that that water is in the system and available for when the state wants it.

Ms. FRANKEL. Which gets to me to I guess to this—another issue, which I unfortunately didn't get to talk to the Jacksonville folks about today, but there seems to be another controversy—again, I am not going to tell you which way really it should go, but in terms of who should actually manage some of these projects, whether it should be—not manage, in terms of the water level in the lake, whether it should be the Army Corps deciding or the state and the local water management. Have you been aware of that particular back and forth?

General SPELLMON. Ma'am, I think what you are referring to is when we get lower down in the operational bank, who—and it is clear from the—to me anyway that this goes to the state, under South Florida Water Management District, takes control of the water distribution when we hit that lower part of the operational band.

Ms. FRANKEL. Okay. Good. Thank you for that answer.

And then there was—well, I don't have—I only have 18 seconds. So the next question will either be in the next round or it will be on the—we will just submit it by paper.

Thank you very much.

I yield bank.

Ms. KAPTUR. I thank Congresswoman Frankel.

And we will move now from the far southeastern region of the country to the far northwest. Congresswoman Herrera Beutler

Ms. HERRERA BEUTLER. Thank you, Madam Chairman.

And I am going to follow Ranking Member Simpson's lead and speak really fast and get as much in as I can.

In my district—and this is for General Spellmon—in Cowlitz County—and I know you know our area well—we have lived with the aftermath of the 1980 eruption of Mount St. Helens for over 20

years. And back in February I was standing on the banks of the Cowlitz River with residents right there who shared concerns about a potentially devastating flood that would wash away their homes. And this is due to the sediment buildup that flows into the river from Mount St. Helens. And you know all about the pile dikes there and what is happening. I think it is incredibly important that the Federal Government lives up to its responsibility here. And I guess it would be for both you and Secretary Connor, what is your office doing to prioritize—or I should say it this way—is your office prioritizing this? I know that we were able to get money into the budget and I know that the President's request was less than what even the Corps thinks might be possible and maybe be looking at bumping that up because we put the capacity to put more money into it, into the budget. Is that something you are willing to do?

General SPELLMON. Yes, ma'am. So let me just give you an update.

So we received, what, \$29 million in 22 appropriations. So with that we will complete the design and finish the spillway raise that you mentioned. That is fully funded and paid for. And then we are also going to work on the new fish release site and to continue to design for the fish collection facility. We don't have the funds to complete that yet. We can do the math and tell you what that would come to, but the important part is what you mentioned, for the flood control, the spillway raise. And that is funded to completion.

Ms. HERRERA BEUTLER. Thank you.

In addition, switching over to shellfish permitting. I wanted to give a kudos to the Seattle Corps. Colonel Bullock has done a great job and has taken it very seriously from the beginning. I have worked with Congressman Kilmer on this and we have been able to secure the funds in partnership with your team's work to meet the needs of shellfish growers who need to plant, grow, and harvest with appropriation permits. And there has been a whole mess of problems there which you guys have been working to get rid of the problems.

Do you have the resources? Is this going to come to completion?

General SPELLMON. Yes, ma'am. So talked to Colonel Bullock this morning. We have completed 552 of those permit actions, moving those to individual permits. We have the next 51 prioritized and there is a trail of about 100 after that that we have got to work with the applications on. We have the resources we need and we appreciate your leadership on this as well.

Ms. HERRERA BEUTLER. Good. Thank you.

Columbia River Turning Basin. Everybody is looking at me funny because I am rapid fire here, but these are so important. This is so critical. It is the lifeblood of my region and for our economy it is so important.

In 2020, the Columbia River Turning Basin and Navigation Improvements Feasibility Study was authorized in WRDA. And the first step in completing this work is for the Corps to conduct that feasibility study. And I understand the Corps is partnering with Ports of Kalama, Ports of Longview in my district on the study. I know that we were able to get about \$200,000 in the last go around. And I think the questions moving forward are—both for Secretary

Connor and/or General Spellmon—what is your office doing to prioritize the funding for this study? And can you provide me with an update on the efforts to improve the efficiencies on the lower Columbia River navigation channel by adding and improving turning basis as identified by the lower Columbia River ports and the river pilots?

General SPELLMON. Ma'am, I will get you a specific update with what we are putting to work with the \$200,000 that you have given us and the non Federal sponsors' money and then I will follow up with you on your second question.

Ms. HERRERA BEUTLER. I love—man, I can even get to even more questions. This is going great. Thank you so much.

Army Corps of Engineers and NOAA have signed an MOU that changes the—this is important—this is probably for Secretary Connor—the environmental baseline for maintenance, permits, and levies, a significant mitigation, even for the basic maintenance for the regulating community. And I understand the—so my concern on this is the potential for permitting processes to become a major stumbling block because of the need to go back to a baseline that takes into account what is currently infrastructure and what is—and changing the baseline, essentially moving the goalpost to what was—you know, to say whatever existing infrastructure is, we don't care, we are going to go back to when that wasn't here. And I am sure—you know, all these things we just talked about are regulatory in nature. This could have a really significant impact on all—everything we have just talked about and the dollars invested.

How are you looking at this with regard to—and this happened in 2018 and it wasn't a very recent thing, but I wanted to hear your thoughts on it and make sure you understood how concerned I am about how this really resets the whole region.

Mr. CONNOR. Absolutely. This is one of the first issues that I stepped into when I took this position, the MOU that we have with NOAA fisheries.

The goal is ultimately to work through this painful process about what the baseline is to make sure we understand under current regulations what is in the baseline, and then determine with the maintenance activities going on, does it change from what the existing structure is doing within the system right now. So it is complicated, it is a fact, but the overall goal is let us agree on the baseline parameters given the existing law, then let us figure out how to do a programmatic biological opinion by both NOAA fisheries and the Fish and Wildlife Service so that we can understand, assess whatever mitigation might be necessary or might not be appropriate and be able to process these permits that have been delayed for quite some time.

So rather than having the standoff, we have tried to work through the issues so that we can get to the programmatic so that we can do the permitting work. We are making good progress. I think we will have programmatic by mid-summer. The question is, does that give us much time in the '22 time frame to do the work. We are probably behind on that. Hopefully we can get some work done, but probably most of it will be in next year's work period.

Ms. HERRERA BEUTLER. Thank you for the extra time.

I yield back.

Ms. KAPTUR. Thank you very much, congresswoman.

And now we will return to the gulf southern Florida region with Congresswoman Debbie Wasserman Schultz.

Ms. WASSERMAN SCHULTZ. Thank you, Madam Chair.

The Atlantic, but same thing.

Ms. KAPTUR. What did I say?

Ms. WASSERMAN SCHULTZ. The gulf. But we are on the east side. But thank you, Madam Chair.

General Spellmon, last year when you came before the subcommittee, you may recall that we talked about the EAA Reservoir. The construction of that reservoir is vital to reducing the harmful discharges and moving clean water south to refresh the Everglades, the River of Grass. We have made remarkable progress in terms of the funding that we have been able to provide to the Everglades restoration process and so we are all thrilled about that. I am sure you are as thrilled as we are because we can get a lot of these projects done.

But you specifically mentioned last year that you would like the administration to provide the Corps with continuing contract authority to reduce contract risks and allow you to accelerate the completion of the reservoir.

My first question—and I am going to do rapid fire like Ms. Herrera Beutler—has the administration provided you with that authority and what is your expected completion for the EAA Reservoir, both if the administration provides you with the continuing contract authority and if they fail to do so?

General SPELLMON. Yes, ma'am.

So there are a lot of technical reasons why we want to have the incremental funding clause on this particular project. Working very closely with Mr. Connor, who is spearheading this conversation within the administration. And we are going to continue to press on this all the way up until get to award time.

Ms. WASSERMAN SCHULTZ. I asked another question. What is your current expected completion date for the EAA Reservoir, both if the administration provides you with that authority and if they fail to do so.

General SPELLMON. Yes, ma'am.

So we were going from a scheduled I shared with South Florida Water Management District. I can give you start dates that we believe. We think this is an 8 to 9 year build—

Ms. WASSERMAN SCHULTZ. Mm-hmm.

General SPELLMON [continuing]. Once we get started.

Ms. WASSERMAN SCHULTZ. Mm-hmm. And then if you don't get the contract authority?

General SPELLMON. Ma'am, it could extend.

Ms. WASSERMAN SCHULTZ. Okay. You hear that, Mr. Connor? We need to get this done.

Mr. CONNOR. Loud and clear.

Ms. WASSERMAN SCHULTZ. Really important. So I know we are planning a call—

Mr. CONNOR. Yes.

Ms. WASSERMAN SCHULTZ [continuing]. In the very near future. I would really like to get that call scheduled so that we can sort this out and get this ball rolling.

Mr. CONNOR. Very good. Absolutely.

Ms. WASSERMAN SCHULTZ. Thank you.

Okay. The Central and South Florida Flood Control Project provides flood protection for the 11 million people who live within its boundaries. The populations of Broward, Palm Beach, and Miami-Dade Counties all depend on a functioning flood control system which faces substantial stress due to changing in the physical environment, especially increased rainfall intensity and rising sea levels caused by climate change.

In fact, a 2009 study by the South Florida Water Management District identified 18 water control structures in Miami-Dade and Broward that are within 6 inches of failure. And experts expect that another 3 inches of sea level rise will occur within a decade. And we know that management of the flood control project needs to be restudied and updated. Thankfully, we included funding to start the re-study under the Corps' Section 216 authority in the FY '22 appropriations bill and President Biden included funding in his budget request for FY '23.

General Spellmon, can you explain the current state of the re-study and what the Corps limitations are to study inland portions of the flood control project, like canal cross sections, conveyances, and secondary structures? And I do have another question.

General SPELLMON. Yes, ma'am.

So we have all the authority we need under Section 216 to look at this from a flood risk management perspective. Thank you for the new start, thank you for the \$475,000. And we are tied in well with South Florida Water Management District on this effort.

Ms. WASSERMAN SCHULTZ. Okay. So the scope of the Section 216 study is narrow. And, you know, I know your interpretation is that it is only intended to investigate coastal salinity structures for flood resilience. The Section 216 study won't consider flood resilience needs throughout the entire system and further inland according to your interpretation. Is that correct?

General SPELLMON. Ma'am, I think we could look at this—my understanding is we can look at this comprehensively from a flood risk management and coast storm risk management perspective. I will go back and confirm if I have the wrong read on that.

Ms. WASSERMAN SCHULTZ. Okay. I was going to read you the statute if you confirmed that that was your position. Since it isn't necessarily, I won't read you the statute. I will spare you that. But we need to understand whether or not we can address the immediate issues that I just went through within your existing authority. And you think that that is not precluded?

General SPELLMON. Ma'am, so there was some discussion can I look at other aquatic ecosystem restoration or other water supply benefits in this under Section 216. The answer to that is no. I believe what you are describing is correct, that falls within our authority. But let me go back and confirm.

Ms. WASSERMAN SCHULTZ. What I don't want to have to do is go back and try to get another new start to be able to do the next phase of this. And I have been asked to submit a project that—but then the feedback we got was that that was what was required and that I couldn't move forward without that authorization. So I definitely need the answer to that question, like today. Because today

is the deadline to submit the project—like an hour from now. So I need the answer right away.

General SPELLMON. Ma'am, we will follow up shortly.

Ms. WASSERMAN SCHULTZ. Okay. Thank you very much.

Madam Chair, I yield back.

Ms. KAPTUR. All right. Thank you very much, Congresswoman Wasserman Schultz.

Now we will move to the Keystone State. Congressman Reschenthaler from Pennsylvania.

Mr. RESCHENTHALER. Thank you, Madam Chair. I appreciate it. Thanks.

General Spellmon, I had a question, and Secretary Connor, I had a question about Lock number 4, Charleroi and the Lower Mon. As you know, it is scheduled to be completed in 2 years, but it is taking 30 years. I mean I was literally in elementary school when that was started, so. What lessons have we learned from that project and what can we do so in the future—what are the takeaways so in the future it doesn't take 30 years to complete a project like that?

General SPELLMON. Sir, so I was out at Charleroi last week and met with the team. This is—we incrementally funded that project for 18 years and had as many contractors working on it. So when we fully funded that recently, it is just accelerating the completion time. So that is the example. We want to fully fund these up front to get them in the ground quicker.

Mr. CONNOR. Nothing more to add. I absolutely agree with General Spellmon.

Mr. RESCHENTHALER. And then talking about Charleroi, I know there is going to be a second lock there. Just do we know, one, when that is to be completed and, two, what the cost is projected to be?

General SPELLMON. Sir, so we believe we are funded to completion at \$111 million that we received in the '20 President's budget. We have what we need and that lock will be function in 2024.

Mr. RESCHENTHALER. I do have some other questions, but I will submit them in writing just because I know we are coming up on votes and some of my colleagues need to ask questions. But thanks for the answer and thanks for being here today.

I yield back.

Ms. KAPTUR. Thank you, Congressman Reschenthaler. And I don't know if you have been watching the monitor, but we have had a full array of members. I am just so proud.

All right. Now we are going to move to the far northwest again. Congressman Kilmer of Washington.

Mr. KILMER. Thank you. Thank you, Madam Chair.

Lieutenant General Spellmon, good to see you again. Assistant Secretary Connor, thank you for being here and good to meet you too.

I wanted to bring up some issues from my neck of the woods. I want to thank Congresswoman Herrera Beutler for mentioning both shellfish permitting and in water construction permitting because it saves me diving into those two issues.

I did learn that Jaime Pinkham, the Principal Deputy Assistant Secretary of the Army for Civil Works visited the Shoalwater Bay

Tribe this week, one of a few examples I have learned about recently where the Corps is starting to engage with tribes in Washington State. As you may know, many tribes in my district are imminently threatened by climate change and sea level rise, forcing them to actively move to higher ground to protect their people.

First, I commend the Corps for starting discussions with tribes on where Corps expertise and assistance can help with the protection and preservation of tribal coastal zones and areas.

So I was hoping you could share any more about these efforts, especially in Washington State. More than anything, I would appreciate a commitment from the Corps to continue this engagement with our tribes and to report back on what, if anything, you need from this committee to ensure the Corps is able to move forward with this.

Washington has over 3,000 miles of marine coastline, 17 tribal communities have made their homes on those coasts since time in memorial. And they are trying to move some of those assets to higher ground. And we believe that the Corps expertise could be very helpful with this.

So would love just to get any more about these efforts and anything you need from our committee to be able to move that forward.

General SPELLMON. Yes, sir. This is General Spellmon. I will start.

So we are at the point now where we are nearly doing an emergency management action on the coastline for the Shoalwaters, the Quinault, the Quileute Tribes about every year. So we appreciate the generous funding in IJA, the \$40 million for the coastal project for the Shoalwater. I would just offer, I think it is time to think broader on the west coast, like we have done on our North Atlantic Comprehensive Coastal Study, our South Atlantic, we are turning in a Texas Coastal Study here for Congress' consideration and WRDA. We would welcome the opportunity for any authorization that would allow us to take a look at the west coast in that manner. And then we have some R&D needs here for our storm modeling for the west coast as well.

Mr. CONNOR. Representative Kilmer—

Mr. KILMER. I would love to follow up with you on—more specifically what you need in terms of those authorities and we would be happy to tag team with you.

General SPELLMON. Yes, sir.

Mr. CONNOR. Representative Kilmer, can I—

Mr. KILMER. The other issue I want to—

Mr. CONNOR. Oh, go ahead.

Mr. KILMER. Yeah, please go ahead.

Mr. CONNOR. I was just going to add very quickly, in addition to coastal protection activities like Shoalwater, I think other programs that we have, whether it is Puget Sound, the permitting activity we are dealing with, or it is Howard Hanson and the tribe's interest in having healthy fish runs, and even up through the Columbia River, those are all going to be part of the activities that we undertake to address the tribes' needs in your state, particularly as it relies on healthy coasts. And so we are committed to do that. Stay tuned, we are going to have more activity in this area.

Mr. KILMER. Appreciate that. And would love to follow up with you.

The other issue I want to quickly ask about is the issues relating to deteriorating infrastructure in failing culverts, which have negative impacts on water quality and threaten many of our endangered species. I know the Corps is working hard on these issues. And Mud Mountain Dam in the Seattle district has been an incredibly important project to improve fish passage, not to mention updating the barrier structure that was built in the early 1900s, requiring frequent maintenance and posing documented personnel safety risk. I understand that there are additional funding needs required to address issues, including changed site conditions. I hope the Corps will consider the additional funding needs to realize this project and its benefits and its work plan. And just wanted to raise that issue and ask any response you have to that.

General SPELLMON. Sir, we are expressing the capability of 42 million to get after this. What we saw in the Pacific Northwest last summer I would add to Ms. Kaptur's list of things that occurred. We had several days of 118-degree temperatures in the Pacific Northwest, not anywhere in anyone's models. And that actually melted portions of a glacier up on Mount Rainer that mobilized sediment that found its way down to the fish passage facility. We didn't plan for that. We have got to go back and reengineer some of our gates and maybe some in-river work as well to deal with this new condition. That is what that additional request is for.

Mr. KILMER. Thank you. And, again, appreciate your time and we will follow up on the Tribal issue. We have got the Quileute and the Hoh and the Makah and the Quinault Indian Nation, all in the process of trying to move assets. And we would love to engage you on that. So, thank you and I yield back.

Ms. KAPTUR. Thank you, Congressman Kilmer. I just wanted to announce there is a floor vote. We have about 9 minutes remaining. We are trying to notify the Speaker to try to hold the vote, but I just wanted to mention that for members.

We will move now also to the State of Washington, Congressman Newhouse, a very faithful attendee at our hearings. Thank you.

Mr. NEWHOUSE. Thank you, Madam Chair. And I agree with you, this is the best committee. We get to help so many people, our opportunity to help people with critical issues around the country, so it is a pleasure to be here with you.

I am going to have several questions that I will submit for the record. Mr. Simpson kind of started a pattern here and I think that it is a good one because we have a lot of things that we want to talk about.

Certainly the Corps and BOR have a significant presence in my state, in my district, you know, from the irrigation waters of the Yakima and the Columbia River Basins to the barging system on the Snake and the Columbia; ongoing Columbia River treaty negotiations are very, very important; the hydropower operations, certainly a critical part of our area; you know, species management, just a lot of issues that we will look forward to receiving responses to those questions that we submit.

But in particular, and just real quickly, Commissioner Palumbo, thanks for being here. And would you please give my regards to

Commissioner Touton? It has been a pleasure working with her over the years and delighted she is leading the team at Reclamation; as like, as I said, has a very significant footprint in Central Washington State.

You know, as many people have talked about today, thinking about water supplies throughout the West, and if you look at that map, the orange part in the State of Washington just happens to be my district. We are experiencing similar situations of many other people throughout the West.

The partnership between Federal partners like BOR and local irrigation districts is something that is very important. And I think we should take the opportunity to highlight one of the newer innovative tools that we have been able to develop for these kinds of collaborations. You know, everybody likes to talk about a success story, so I wanted to give us an opportunity to do that.

In the last administration we created, as you know, the title transfer process that conveys titles from the Bureau to local irrigation districts for the facilities that are managed and operated by those local districts. And we were, I think, the first two to exercise that new authority. We finalized two of those transfers for the Kennewick as well as the Greater Wenatchee irrigation districts.

And it has really been bipartisan. In fact, I should say, Madam Chair, this has been a nonpartisan success. It is really something that I think is significant and it is a good example of the Federal Government's recognition that our local communities and those who closely manage and depend on these systems can often be the ones most—the best at the handling of the management of these resources.

So, Commissioner Palumbo, I just wondered if you could share any brief thoughts that you might have on this new title transfer tool?

Mr. PALUMBO. Thank you very much, Congressman. And I will pass along the regards to Commissioner Touton. We are very fortunate to be under her leadership as well as Michael Brain's coming on as Deputy Commissioner.

With respect to title transfer, you are right, it is a very helpful tool. Greater Wenatchee was very successful. Kennewick was very successful. We have a laundry list of additional title transfers that we are working through. And Assistant Secretary Trujillo, and I were talking about that this morning, that we would be very supportive of working through, as appropriate, those title transfers that come to us and making sure those assets get into the hands of those who are managing them on the ground, again, as appropriate. So, it is a proper tool and we look forward to working with you and others across the West to implement that.

Mr. NEWHOUSE. Thank you. And I think we need to recognize local irrigation districts for working with you and our Federal partners, and look forward to celebrating some of these successes with you on the ground later this summer. So, thank you very much.

And thanks to all of you for being here. And that is part of the great part of this committee. We have very great witnesses to glean a lot of knowledge from, so thank you, Madam Chair.

Ms. KAPTUR. Thank you so very much, Congressman Newhouse. We will now turn to Congressman Tim Ryan of Ohio, who rep-

resents communities that border Pennsylvania, where the water actually drains all the way from up north, all the way down to the Ohio River. So, thank you so much, Congressman Ryan. Glad to have you.

Mr. RYAN. Thank you, Chairwoman Kaptur. Sorry I couldn't be there in person.

General Spellmon, in your testimony last year before the committee, this same subcommittee, we discussed the fact that the Army Corps is constrained in its ability to execute authorities that Congress gave it to help clean up contaminated rivers such as the Mahoning River in my congressional district. As I know you are aware, the reason that the Corps has given for this inability to help on this high priority project is that the Corps claims that if it dredges the river, then it might get sued.

General, this is exactly the kind of bureaucratic red tape that makes me and many other Americans so frustrated with our government. I have been trying for over 19 years, since the day I arrived in Congress, to get the Army Corps and the EPA to stop pointing fingers at each other and actually do something.

Last year in your testimony before this subcommittee you actually gave me and my constituents a glimmer of hope. You stated, "You have a willing partner in the Corps. I've learned of this project. I've reached out to Administrator Regan at the EPA. It makes little sense to have the national capability like the Corps that is very good at cleaning up these sites. I don't have liability protection anywhere in my Civil Works Program, so I've asked the administrator to work with us and give us a Hold Harmless Agreement so we can help out and clean up the Mahoning River. So, we are starting those conversations with EPA and we look forward to moving forward on your projects."

So, General, it is 1 year later. Did you get the Hold Harmless Agreement you needed from the EPA to help the Mahoning River?

General SPELLMON. Sir, no, I didn't. First, I just wanted to correct the record. I am not concerned about getting sued. That happens all the time. I am concerned about public safety and that is what this is all about.

So, just to update you since the May '21 hearing, we have—I have got to inform the analysis and the recommendations that I take back to EPA and Secretary Connor. So, to do that we achieved a positive Federal interest determination in September, so that is just a few months after I last testified. We requested and received the bulk of the funding that we need to complete a feasibility study on what is on the bottom of the river, how much is there, where is it located, what is the best way to remediate that? So, I have got that money.

We are working now with our non-Federal sponsor. That is the Eastgate Regional Council of Governments. And we want to enter into a Federal cost-sharing agreement. We are ready to sign that agreement today. Our non-Federal sponsors are lining up. They are funding and they also are dealing with one real estate—it is a water intake that they need to move in the vicinity of Girard Dam.

So, as soon as they have their funding lined up, they have taken care of the real estate issue, we will get moving on the feasibility study. We think that is about a 1-year to 18-month effort. These

are complicated. We want to make sure we get the details right, so that when we go back to EPA to have a more detailed conversation on protection, again, for the people that live in that region and the potential impacts, so we can have an informed conversation on the risks.

So, that is where we are today, sir. We are moving ahead under the authorities that you have. We have the funding we need for the next steps.

Mr. RYAN. I appreciate that. And we will make sure that you are getting connected to all the local people and that they know exactly what their responsibilities are going to be in all this.

I know we have got votes called here, so I won't take any more of your time, but I appreciate it. And we will continue to stay in contact. And Chairwoman Kaptur, I yield back the balance of my time.

Ms. KAPTUR. Thank you very much, Congressman Ryan. In the interest of time, we thank you for being such a strong advocate for Ohio. I wanted to just ask General Spellmon one additional question and then I will move to our ranking member and we will close the hearing in view of the votes that are ongoing on the House floor.

The Great Lakes Navigation System, as you know, General, is just that, a system. And when we don't take care of one part of it, it harms another part. And I am concerned with the Corps' fiscal year 2022 and 2023 spend plan for operations and maintenance funds provided in the infrastructure for operation—excuse me, provided in the Infrastructure Investment and Jobs Act. What I see is disinvestment in Ohio's navigation infrastructure. Of the \$3 billion that the Corps has announced to date, only 250,000 is included for Ohio, which has the shallowest water.

Can you please tell us how you see the Ohio ports fitting into the Great Lakes Navigation System and the steps this administration will take with both regular appropriations and infrastructure funds to ensure the long-term viability of Ohio's ports and the larger system of which it is a part?

General SPELLMON. Yes, ma'am. I will just start out by saying you are exactly right about the Great Lakes Navigation System. It is our Nation's fourth coastline. And the Ohio ports are certainly an important part of that.

We have the funding we need to dredge seven of the eight Ohio ports this year that need it. Huron Harbor does not need dredging this year, so we have what we need.

Regarding there is some extensive work that needs to be done on piers, breakwaters, and dredge facilities. So, we have requested \$1.75 million in the fiscal year 2022 work plan. What that will allow us—we will get those results in mid-May. What that will allow us to do is to complete the design on those breakwaters and piers. And that will inform the budget submission that we will make in '23 to get after that work.

Ms. KAPTUR. All right. Thank you very much for putting that on the record. We look forward to working with you.

I would like to turn to the ranking member and see if he has any—no?

Mr. SIMPSON. No.

Ms. KAPTUR. All right.

Mr. SIMPSON. Thank you all.

Ms. KAPTUR. Thank you very much, Ranking Member Simpson, for your vigilant participation throughout. And as we have gotten through round one of questions, but given the votes, we are going to conclude this hearing. And I would just like to thank our outstanding witnesses for not just your testimony today, but your service to our country. Anyone who could hear this hearing would be very proud of each one of you and the kinds of major tasks that we are dealing with across this country to make communities livable. So, I want to thank you for joining us today.

I want to ask our witnesses to please ensure for the hearing record that questions for the record and any supporting information requested by the subcommittee are delivered in final form to us no later than 3 weeks from the time you receive them. Members who have additional questions for the record will have until the close of business this coming Monday to provide them to the subcommittee office.

Again, thank you so very much. This hearing is adjourned.

[Questions and answers submitted for the RECORD follow:]

QUESTIONS FOR THE RECORD
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT
U.S. HOUSE COMMITTEE ON APPROPRIATIONS

**Hearing: Fiscal Year 2023 Budget Request for the U.S. Army Corps
of Engineers and Bureau of Reclamation**
Wednesday, April 27, 2022

Chairwoman Kaptur

1. Fostering Inter-Agency Coordination

You may be aware that there is no Bureau of Reclamation in my part of the country – the Great Lakes region. However, I am interested in taking the lessons learned at your agency and applying them across other government entities.

Question: Deputy Commissioner Palumbo and Assistant Secretary Trujillo, given the nature of the historic drought taking place in the West, how has your agency adapted to meet the needs of the current moment? What advice might you give other agencies who are preparing to tackle the problems of tomorrow?

Answer: Reclamation has continued to learn from its decades of experience managing and mitigating drought conditions. Reclamation would emphasize the need to be grounded in sound science, the necessity of strong relationships with internal and external stakeholders, transparent communication with a focus on collaboration, and identifying synergies among agencies for the purpose of working together in a collaborative manner. It is also critical to share information with the public and listen to and address as appropriate the feedback received.

Ranking Member Simpson

2. Indian Water Rights Settlements

The budget request for the Bureau of Reclamation proposes to stop funding Indian Water Rights Settlements through discretionary appropriations and instead proposes to move all work to mandatory funding. Funding provided to date will not be sufficient to cover all these needs. It's a similar situation for rural water projects, yet rural water projects continue to be included in the discretionary appropriations request.

Question: Secretary Trujillo, does the Administration consider Indian Water Rights Settlements a priority? How do you square that with the budget request?

Answer: Yes, the Administration absolutely considers Indian Water Rights Settlements to be a priority. To give context, the Bipartisan Infrastructure Law made \$2.5 billion available to the Secretary of the Interior to satisfy the obligations of Tribal settlements as authorized by Congress on or before November 15, 2021. Funds were made available to both the Bureau of Reclamation and the Bureau of Indian Affairs to satisfy existing obligations of the United States. This year, the Secretary allocated over \$1.7 billion of these funds, including \$355 million for Reclamation obligations. Consistent with legislative requirements, Reclamation has focused these allocations to fulfill its obligations, including construction of water infrastructure, under the settlements. Reclamation carefully allocates funding for its responsibilities on an annual basis based on capability to complete construction segments or other settlement requirements. Reclamation also has funding available through other authorities in addition to the Indian Water Settlements Completion Fund established by the Bipartisan Infrastructure Law. These include the Reclamation Water Settlements Fund, and Lower Colorado River Basin Development Fund. These additional sources of funding are sufficient to fund all settlement needs in FY 2023.

Reclamation further supports the Administration's proposal for legislation to address the ongoing resource management and operations/maintenance needs for settlement implementation related to the Ak-Chin Indian Water Rights Settlement, the Colorado Ute Settlement (funded through the Animas-La Plata project), the Nez Perce Settlement (funded through the Columbia and Snake River Salmon Recovery Project) and the Navajo-Gallup Water Supply Project. These needs are ongoing and are planned to exceed the scope and availability of funding made available through the Bipartisan Infrastructure Law. The current proposal is for \$340 million in mandatory funding over ten years.

Question: Secretary Trujillo, how will Reclamation ensure sufficient funding for these activities if the mandatory funding proposal – for which there is no legislative language – is not enacted?

Answer: The Administration is interested in working with Congress on an approach to provide a mandatory funding source for future Indian water rights settlement costs. The FY 2023 President's Budget proposed to provide mandatory funding of \$34.0 million annually over 10 years to Reclamation for ongoing operations, maintenance, and repair costs for previously enacted Indian Water Rights Settlements. The Administration will continue to work with Congress to ensure sufficient funding to meet our water rights settlement obligations in FY 2023 and beyond.

3. American Falls Spillway

The American Falls Spillway repair project is required due to the failure of concrete in the spillway structure, which was replaced in the 1970s. The upper Snake River spaceholders above Milner Dam in Idaho and Idaho Power together are obligated to pay for nearly 70% of the

project costs, with Reclamation funding the balance. The original estimated total cost was approximately \$5 million. The project has had substantial setbacks, including a new contractor, and the new total cost is more than \$12 million – two and a half times the original cost to spaceholders. All at no fault of the spaceholders. Reclamation even allowed the original contractor to walk without any responsibility. Now the spaceholders are left with the bill or face litigation.

Question: Mr. Palumbo, has the Commissioner reviewed the American Falls Spillway project and the increased costs to the spaceholders?

The Commissioner has reviewed the American Falls Spillway project as well as the increased cost to the spaceholders and is committed to staying engaged on the project and continuing coordination with the spaceholders.

Question: Mr. Palumbo, why did Reclamation choose not to try to recover damages from the former contractor and its surety?

Reclamation terminated the contract for default. The surety was contacted to pay the performance bond but chose not to until the case was resolved. Compelling the surety to pay would require involvement from the Department of Justice, however the Department of the Interior's Office of the Solicitor advised against this path. The contractor is in serious financial trouble and would not have been able to pay any judgement determined by the Civilian Board of Contract Appeals. Since the dispute resulted in a termination for convenience, the surety was not obligated to pay the bond.

Concurrent with settlement negotiations, Reclamation analyzed the 2021 onsite work and discovered that the new contractor experienced schedule-related issues similar to the original contractor. This information contributed to Reclamation's decision to settle for no cost and to change to termination for convenience.

Question: Mr. Palumbo, what is the justification for such an enormous cost increase for Idaho spaceholders?

Factors that contributed to the increased project cost include impacts related to COVID such as contractor labor shortage and increased construction material cost; awarding a re-purchased contract to a new contractor who needed to quickly begin work; Reclamation staff time to support litigation; and adding a third construction season to ensure the safe and reliable operation of the facility.

Question: Mr. Palumbo, is there any alternative that may provide relief for the spaceholders?

Reclamation recognizes the financial impacts to the spaceholders as well as Idaho Power Company and is committed to pursuing alternative strategies for completing the project that may provide financial relief, including supporting extended repayment through the Bipartisan Infrastructure Law Aging Infrastructure Account funding, rescheduling

optional project components to be completed in the future, and planning other project schedules to spread the spaceholders' financial obligation across multiple years.

Congressman Calvert

4. Voluntary Agreements

As you know, the recently signed MOU on voluntary agreements (VA) was met with mixed reviews from water contractors in California.

Question: [Deputy Commissioner Palumbo and Assistant Secretary Trujillo] What is the Bureau of Reclamation's role in the voluntary agreements, outlined in the March memorandum of understanding?

Answer: The Bureau of Reclamation's role is to work with the Parties to develop a comprehensive approach in the Bay-Delta on managing habitat, flow, and other factors required to protect native fish and wildlife species, while concurrently protecting water supply reliability, consistent with the legal requirement of providing reasonable protection for all beneficial uses. This includes cooperating with the Parties to submit the Term Sheet to the California State Water Resources Control Board, so that it may consider including the Voluntary Agreements Program, consistent with Resolution 2018-0059, as the pathway to implement the Narrative Salmon Objective and a proposed Narrative Viability Objective for the Voluntary Agreement Parties.

Question: [Deputy Commissioner Palumbo and Assistant Secretary Trujillo] Will implementation of the VAs require Federal legislation?

Answer: Reclamation is evaluating implementation of the Voluntary Agreement through its existing authorities; however, Reclamation would comply with Federal legislation that provided guidance regarding governance, funding, cost-share, and other issues associated with the Voluntary Agreements.

Question: [Deputy Commissioner Palumbo and Assistant Secretary Trujillo] Please provide only a yes or no answer - As the Bureau pursues reconsultation of the Biological Opinions, does the Bureau oppose delta outflow requirements in excess of VA requirements?

Answer: Reclamation is working through the environmental compliance requirements of the reconsultation, recently completed public scoping, and is in the process of developing the initial alternatives. Any such statement at this time would be pre-decisional to that alternative development process. In any event, the Voluntary Agreements have not been finalized.

Question: [Deputy Commissioner Palumbo and Assistant Secretary Trujillo] The state of California will begin reviewing the VAs in year six to determine their effectiveness. What metrics do the VAs describe to determine if the agreements were successful?

Answer: The proposed Voluntary Agreements include a comprehensive structure that incorporates a robust governance structure, strategic planning, annual and triennial reports, and Science Program that establish and track accomplishment of agreed upon metrics. Most specifically, Appendix 4 of the MOU, "Metrics, Monitoring, and Outcomes Framework for Assessing VA Effectiveness", details the metrics and approaches to be used by the Parties. These agreed upon metrics would ultimately be used by the California State Water Resources Control Board to consider potential amendments to the VAs after Year 8, under the "green"- "yellow"- "red" structure described in Section 7.4.B of the proposed VA.

Question: [Deputy Commissioner Palumbo and Assistant Secretary Trujillo] How did the Bureau arrive at \$740 million for new funding for habitat restoration? Has the Bureau identified specific projects and if so, please identify those projects?

Answer: The \$740 million is identified in Table 4 from the Memorandum of Understanding for the Voluntary Agreements. The purpose of this new Federal funding is to support habitat restoration throughout tributaries, multi-benefit projects, and Sacramento Valley Habitat Projects. The estimate is based upon new funding needed for managed floodplain, floodplain restoration, farmland food production, side channel habitat restoration, gravel placement, tidal habitat, fish screening and passage, and science and adaptive management. Reclamation proposes to continue to use competitive processes to prioritize actions with the State of California, other Federal agencies, and VA Parties. Reclamation recently announced a three-year Notice of Funding Opportunity Announcement with estimated total program funding of \$120,000,000 for habitat and facility improvement projects that enhance Chinook salmon and steelhead trout production and associated habitats in the Central Valley, for which non-Federal entities are eligible to apply. Additional funding received for this effort will continue to fund projects through the existing competitive process.

Question: [Deputy Commissioner Palumbo and Assistant Secretary Trujillo] Does the Bureau have a plan to protect Federal contractors not party to the MOU?

Answer: Reclamation believes the Voluntary Agreements best protect all Federal contractors by meeting updated requirements of the Water Quality Control Plan in a manner that best preserves operational flexibility and water supply for the Central Valley Project. Reclamation, through multiple monthly, quarterly, and other meetings, will continue to keep all Federal contractors apprised of the progress on the Voluntary Agreements.

Question: [Deputy Commissioner Palumbo and Assistant Secretary Trujillo] Has the Department consulted with the Environmental Protection Agency (EPA) on the VAs and the Federal interest in CVP water that may become subject to an unimpaired flows standard?

Answer: Reclamation is currently working through the environmental compliance requirements for the reconsultation, including coordination and consultation with all appropriate Federal agencies. The Voluntary Agreements implement the Clean Water Act responsibilities that have been delegated by EPA to the State.

5. **Long Term Operations of the Central Valley Project and State Water Project, Reinitiation of Consultation, and Interim Operations**

Water users in California remain concerned about the Bureau's decision to reinitiate consultation of the 2019 Biological Opinions, which were developed through a rigorous process using the best available science. Just two years into their implementation, the Bureau has decided to reverse course. Despite the ongoing drought, which was thoroughly envisioned in the 2019 BiOps, it is difficult to believe these permits have been in place long enough for a serious scientific assessment of their efficacy.

Question: [Deputy Commissioner Palumbo and Assistant Secretary Trujillo] In court filings, career staff continued to highlight the latest and greatest science used to develop the biological opinions, but the Bureau is pursuing reconsultation anyway. Please provide a yes or no answer - did the recommendation to reinitiate consultation originate with career staff and scientists in the field?

Answer: Reinitiation of consultation on the operations of the Central Valley Project occurred in response to the review required by Executive Order 13990, *Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis*. The regional directors of Reclamation and the U.S. Fish and Wildlife Service, and the Regional Administrator of National Marine Fisheries Service signed a memorandum identifying that the Biological Opinions can best be reviewed through a process with the State of California to reconcile measures with the State's March 31, 2020 Incidental Take Permit for Long-Term Operations of the State Water Project and the development of Voluntary Agreements as an alternative to the State Water Resources Control Board's update to the Bay-Delta Water Quality Control Plan.

Question: [Deputy Commissioner Palumbo and Assistant Secretary Trujillo] Part of the Bureau's justification was the inconsistency between the biological opinions and the state's incidental take permit (ITP). The ITP was opposed by water users and environmental groups alike. Meanwhile, the biological opinions have broad support from water users. How was the decision made to abandon the biological opinions instead of working with the state to improve the ITP to match Federal operating criteria?

Answer: Reclamation, Federal, and state partners seek to reconcile differences between operations consulted upon for the 2019 Biological Opinions and the 2020 ITP. We expect the State to amend or replace the ITP consistent with the Proposed Action and new Biological Opinions where appropriate. The partner agencies are coordinating to develop reasonable alternatives for evaluation under NEPA and Reclamation is engaging the various interested parties, including water users and environmental groups to consider additive scientific information into the development of these alternatives. Federal and State agencies are developing a new joint Proposed Action. This new Proposed Action would be consulted in connection with Federal Biological Opinions and permitted in a new or amended State Incidental Take Permit.

Question: [Deputy Commissioner Palumbo and Assistant Secretary Trujillo] As it relates to the Interim Operations Plan, does the Bureau intend to develop future operating criteria behind closed doors in court instead of through a collaborative, transparent, and science-based process?

Answer: Federal Defendants and State Plaintiffs coordinated with the defendant interveners and plaintiffs on the Interim Operations Plan for 2022 and made changes prior to submittal to the court. Paragraph 18 of the court order requires that the Federal Defendants and State Plaintiffs collaborate with each other on development of interim operations for Water Years 2023 and 2024 and confer with public water agencies that contract for delivery of water from the CVP and the SWP and the Pacific Coast Federation of Fishermen's Associations.

Question: [Deputy Commissioner Palumbo and Assistant Secretary Trujillo] Does the Bureau have any plans to reimburse the State Project for state water the IOP employs to backfill Federal temperature management requirements?

Answer: Reclamation operates the CVP, and the California Department of Water Resources (DWR) operates the SWP, under the 1986 Coordinated Operation Agreement, as amended in 2018, between the Federal government and the State of California, as authorized by Public Law 99-546. The coordination includes exchange and transfer of water between the CVP and SWP to meet various project needs.

Congressman Newhouse

6. Odessa Ground Water Replacement Program (OGWRP)

As you may know, The Odessa Ground Water Replacement Program (OGWRP) is an in-progress effort being undertaken by the U.S. Bureau of Reclamation, the State of Washington, and East Columbia Basin Irrigation District within the Federal Columbia Basin Project (CBP). The purpose of the program is to conserve remaining ground water supplies for domestic uses while maintaining the agricultural economy in an area experiencing a severely declining aquifer. The OGWRP partners agreed to limit the scope of the program to replacing existing deep well irrigation rather than pursuing phased development of remaining undeveloped land. This limitation, to replacement only, is recognized in statutes enacted by the Washington Legislature and in Secondary Use Water Right Permits issued by the Washington Department of Ecology.

The Odessa Subarea Special Study, co-authored by Reclamation and Washington Department of Ecology, identified a preferred alternative that maximizes the use of the current East Low Canal and construction of pump station/pipeline distribution systems to deliver water to replace groundwater use. Reclamation has declined to request funding for construction of groundwater replacement distribution systems, because, in part, the lands to be served by these systems are not covered by a repayment contract with East Columbia Basin Irrigation District. Requiring landowners to pay for both the construction of temporary conservation facilities and future permanent Project infrastructure is patently unfair. There are many examples of Reclamation investments in public interest projects that do not require repayment.

Question: Deputy Commissioner Palumbo, will the Bureau of Reclamation commit to reviewing whether Reclamation investments in the Odessa Ground Water Replacement Program facilities are subject to repayment or are public interest projects not subject to repayment?

Answer: Reclamation, in coordination with the Department and the Administration, commits to working with Congress on this issue.

Reclamation projects serve multiple purposes in the public interest. Federal reclamation law directs Reclamation to treat investments allocated to irrigation, municipal and industrial water supply, and hydropower as reimbursable, while allowing costs allocated to fish and wildlife, recreation, and flood control to be non-reimbursable. Absent clear Congressional direction to the contrary, reclamation law requires Reclamation to recover construction costs allocated to irrigation in a repayment contract.

Reclamation has reviewed whether Federal investments in construction of the Odessa Groundwater Replacement Program may be non-reimbursable. We have concluded that because the project principally benefits irrigation, Federal investment in construction requires a repayment contract to recover the construction costs of the project unless otherwise authorized by Congress. Reclamation continues to review our non-reimbursable grant authorities for opportunities to support OGWRP.

QUESTIONS FOR THE RECORD
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT
U.S. HOUSE COMMITTEE ON APPROPRIATIONS

**Hearing: Fiscal Year 2023 Budget Request for the U.S. Army Corps
of Engineers and Bureau of Reclamation**
Wednesday, April 27, 2022

Chairwoman Kaptur

1. Soo Locks

General Spellmon and Mr. Connor, I want to thank you for prioritizing the Soo Locks. Between the FY22 appropriations bill and the Bipartisan Infrastructure Law, we secured nearly \$1 billion for this critical project.

However, I understand the project is facing major cost increases, which is very concerning.

1a. Question: General Spellmon, can you give us an update on the status of the project and what the Corps is doing to manage this potential cost increase?

Answer: Significant progress has been made since the project was reauthorized in 2018. The remaining required work has been broken into three phases. Phase I, Upstream Channel Deepening, is on schedule to be complete in summer 2022. Phase II, Upstream Approach Wall Rehab, is 40 percent complete and is expected to be complete in summer 2024. Design is complete for Phase III, the New Lock Chamber, and the solicitation is in progress with a potential contract award in June 2022.

Due to current industry market conditions and early assumptions made by USACE, the Phase III New Lock at the Soo has experienced a major cost increase. Phase III comprises 90 percent of total construction costs. Additional cost growth will be managed by continuously monitoring costs and schedules during the construction contract.

1b. Question: Mr. Connor and General Spellmon, a project with the complexity and scope of Soo Locks requires careful oversight by your offices. What steps are you taking to ensure the local District has the resources and expertise to implement the project to effectively deliver this critically important project?

Answer: An Integrated Project Office (IPO) has been established at the project site with a staff dedicated to overseeing the construction of the New Soo Lock. A manager from the recently completed Olmsted Lock & Dam construction project is leading the IPO. The project is briefed weekly to District Leaders and monthly to the USACE Great Lakes and Ohio River Division Senior Executives and Division Commander.

The USACE Inland Navigation Design Center (INDC) designed the New Lock Chamber. The center of expertise provides engineering, design, analysis, and review services for new inland navigation locks to promote quality and consistency in design as well as technical competency.

2. Alternative Delivery and Innovative Funding Partnerships

As we discussed during last year's hearing, this Subcommittee, on a bipartisan basis, has long been supportive of exploring alternative delivery methods and innovative financing mechanisms - with the caveat that they not be implemented in a way that allows non-federal sponsors with greater financial resources to jump to the front of the line for federal funding. Unfortunately, this budget request, just like the past few years, seems to encourage this with the proposed Innovative Funding Partnerships line item.

2. Question: Secretary Connor, do you agree with that concern? What is being done, or what can be done, to ensure we avoid that outcome?

Answer: I consider all projects equally and use the appropriations to support the projects and the Nation. My staff is working to develop the appropriate way to incorporate alternative delivery approaches into the budgeting process and broadly throughout USACE. The program is designed to reduce Federal and non-Federal costs, and to accelerate the delivery of benefits. However, as a pilot program, we are still working to understand the magnitude of the potential cost savings and accelerated benefits as well as how these approaches can be applied to the various types of USACE projects. We anticipate that further experience implementing the program will provide greater insight on how to equitably incorporate alternative delivery benefits.

Ranking Member Simpson

3. Little Wood River (Gooding Wall) Project

The Little Wood River, or Gooding Wall, project in my district is a relatively small project in the context of the overall Corps Civil Works program, but it will have a big impact for my constituents. I have been working on this project almost as long as I have been in Congress. I am hopeful that we may finally make significant progress this year.

3. Question: General Spellmon, will you work with me to ensure the Corps can successfully complete this project?

Answer: I will be happy to work with you on this project.

4. Program Execution

The Corps has received significant increases in annual funding for the better part of a decade now, as well as substantial supplemental appropriations in 2018, 2019, and 2021. Congress has provided these funds in recognition of the importance of the civil works program. Now it is up to the Corps to successfully execute its program.

4a. Question: General Spellmon, can you please discuss the steps you are taking to ensure that projects are completed or advanced efficiently and effectively?

Answer: USACE is undertaking a comprehensive survey to understand the effects of market conditions, supply chain constraints, and labor shortages on our projects. This effort is intended to reveal the effects of these factors on construction schedules and the results of the survey will be used to develop recommendations on how to account for these challenges to deliver complete projects efficiently and effectively. USACE also hears from construction industry experts routinely, for example, through its Industry Days, and through discussions with construction contractors on the implementation of particularly complex Corps construction projects.

4b. Question: General Spellmon, how are you dealing with ensuring good cost estimates, especially in light of current inflationary pressures? Do you believe the management reserve is sufficient or should there have been more cautious decisions on allocating funding?

Answer: I have taken several steps to ensure budget estimates for future years are as accurate as possible. USACE cost engineering practices include vendor quotations on key construction items of high dollar value; quotations are sought from multiple vendors to root out single source bias. The quotes are requested for Freight on Board (FOB) delivery to ensure supply chain issues are adequately addressed. The base cost estimate includes the “known risks” while the “unknown risks,” such as hyperinflation and supply chain risks, are included in the project Risk Register and modeled to develop project contingencies that address both cost and schedule impacts.

Additionally, USACE uses the Department of Defense Selling Price Index (SPI) to calculate inflation, which is updated on a quarterly basis. The district cost engineers are trained to regularly track and evaluate current market conditions to update construction cost estimates as required to address inflation and other factors.

The Corps is working expeditiously and seamlessly to address funding challenges stemming from inflation, current market conditions, and updated designs and environmental requirements, as well as other factors.

5. Waters of the United States

Secretary Connor, during your confirmation hearing and several times since then, you referenced the need for a “durable” Waters of the United States rule that will withstand legal scrutiny so that we can end the cycle of WOTUS litigation. Considering there is a case related to the scope of the Clean Water Act pending before the Supreme Court, it seems only logical that development of a “durable” rule would come after that court decision. Rushing a rulemaking now would simply waste resources that could be better spent clearing the huge permitting backlog.

5. Question: Secretary Connor, will you commit to holding off on finalizing a new rule until after the Supreme Court has decided *Sackett*?

Answer: The public comment period on the proposed rule closed on February 7, 2022. The agencies are currently reviewing the comments received. The agencies remain committed to establishing a durable definition of “waters of the United States” that is informed by diverse perspectives and protects public health, the environment, and downstream communities, while supporting economic opportunity, agriculture, and industries that depend on clean water.

6. Outyear Funding Needs

The Administration chose to allocate infrastructure bill funding to initiate, but not complete, several sizable projects. I recognize that that choice was allowed under the text of the law, but I’m concerned about the implications of these decisions on future year appropriations needs.

6. Question: Secretary Connor, were outyear impacts considered when making these allocations? Are all relevant agencies within the executive branch committed to requesting the additional funding necessary for these projects in future budget requests?

Answer: The Army did consider project out-year funding needs, in addition to other considerations, while making final decisions for the use of Infrastructure Investment and Jobs Act (IIJA) supplemental funding.

Congresswoman Watson Coleman

7. Green Brook Sub Basin Flood Management Project

The US Army Corps Green Brook Sub Basin Flood Management project recently received \$496 million in the Public Law No. 117-43, emergency supplemental funding to support Hurricane Ida recovery efforts. The funding for the Green Brook Sub Basin Flood Management Project would help to repair damage to the completed portions of the project as well as accelerate the overall completion. I have been told that implementation guidance on how the funding will affect the project will be coming soon.

7. Question: For **Lieutenant General Spellmon**, what is the status of the implementation guidance following the increase in funding from the US Army Corps Headquarters? How will the project timeline and cost-sharing with local and non-federal partners change with the increased funding?

Answer: Assistant Secretary Connor issued the implementation guidance for the Disaster Relief Supplemental Appropriation Act (DRSAA) and IJA programs on April 25, 2022. It is publicly available at <https://www.usace.army.mil/missions/civil-works/budget/>.

USACE and the New Jersey Department of Environmental Protection, which is the non-Federal sponsor, are working with the local municipalities to assess ways to use the opportunity provided by the Federal funding to accelerate construction of the remaining work in the lower basin and Stony Brook. DRSAA allows the non-Federal sponsor to provide its cost share as the project is constructed or, alternatively, to finance the non-Federal share of the project cost with interest over a period of up to 30 years after project completion.

The \$496 million provided for the Raritan River Basin, Green Brook Sub-Basin, New Jersey project in the Corps DRSSA spend plan reflects the Corps estimate of the total cost (Federal plus non-Federal shares) to complete the work in the lower portion of the basin and the Stony Brook portion of the basin. DRSSA includes a provision stating that the completion of an ongoing construction project receiving funds under that Act shall be at full Federal expense with respect to those funds. This project does not qualify for this exemption from cost sharing because the Corps is considering additional work in the upper portion of the basin, which the spend plan did not fund. This additional work is the subject of an ongoing general re-evaluation study.

Congressman Newhouse

8. Columbia River Treaty

As you know, the Corps of Engineers is heavily engaged in my state and my District. The same is true for the Bureau of Reclamation as you are aware from your prior service at the Department of the Interior. There are so many issues to discuss, from endangered species to irrigation to

barge traffic; all of which ultimately depends on the operations of the Columbia River System. There's another issue that is causing me and my Northwest colleagues to seriously question the Corps of Engineers - and that's the Columbia River Treaty modernization effort.

For several years the Corps has indicated that it would be coming forward with a flood control plan to meet the Columbia River Treaty changes coming to the flood control regime in 2024. I understand we are in negotiations with the Canadians and this is a sensitive issue. But I have to tell you, I am frustrated, my colleagues are frustrated. We need to know that the Corps is fully engaged with a plan for flood control and funding levels approved by the Administration. Ratepayers in my District are the largest contributors to the Canadian Entitlement - approximately \$50 per year. My constituents should not be responsible for flood control for other parts of the region.

8. Question: Assistant Secretary Connor, can you give us some information on the status of a Corps of Engineers plan to conclude talks with Canada on a modernized treaty and flood control regime that is not a burden on my electric ratepayers, my constituents?

Answer: The State Department, which is the lead Federal agency for the negotiations, is working with the Army Corps of Engineers and other Federal agencies to modernize the Treaty and move the negotiations forward with Canada. Coordinating operations in a pre-planned manner with Canada remains the most advantageous route for both countries, and we are encouraging and supporting a productive negotiated outcome.

If the countries do not reach an agreement to modernize the Treaty, USACE is prepared to operate the Columbia River system in accordance with the existing Flood Risk Management terms of the Treaty as they would change to a less-defined approach in September 2024. Depending on the progress and outcome of the ongoing negotiations, the State Department with support from USACE and the Bureau of Reclamation plan to engage the stakeholders in the Columbia River Basin to inform them about possible post-2024 operations.

Congressman Reschenthaler

9. Permitting Backlog

The Corps is estimated to have more than \$109 billion worth of backlogged projects, more than 15 times their annual budget. This backlog creates delays & uncertainty for industry, hindering infrastructure & other investments desperately needed in southwestern Pennsylvania.

9. Question: Assistant Secretary Connor, what is the Corps' plan to eliminate the permitting backlog that is hindering economic development in our energy, infrastructure, and manufacturing industries?

Answer: USACE intends to use funding provided in the Bipartisan Infrastructure Law to create an agile workforce and improve organizational structure, develop innovative processes,

leverage existing and develop new technology, and strengthen relationships to enhance delivery of permit decisions in the Regulatory Program.

10. Approved Jurisdiction Determinations (AJDs)

Assistant Secretary Connor, you said previously that your office wouldn't be reopening standalone AJDs under the Navigable Waters Protection Rule (NWPR). However, I am hearing that staff in Corps offices around the country are telling project developers that the negative AJDs issued under the NWPR – which should be valid for five years – cannot be relied on. When pressed about this, Corps staff are telling developers that the direction is coming from HQ.

10. Question: Assistant Secretary Connor, is there any policy direction from HQ that negative AJDs completed under the NWPR are no longer valid? Has the Corps communicated any relevant policy changes with the public through official channels? Can you confirm that the Corps won't pursue enforcement actions against permittees continue to do work under their lawful negative AJD?

Answer: In response to the U.S. District Court for the District of Arizona's order vacating and remanding the Navigable Waters Protection Rule, the Environmental Protection Agency and the Department of the Army posted a statement regarding the status of the Navigable Waters Protection Rule (NWPR) and Approved Jurisdictional Determinations (AJDs) finalized by the Corps under the NWPR on its website on 5 January 2022. The statement is publicly available at <https://www.usace.army.mil/Media/Announcements/Article/2888988/5-january-2022-navigable-waters-protection-rule-vacatur/>. The same language was also posted on Corps' district and division web sites. Because of the vacatur and the resulting return to the pre-2015 regulatory regime, AJDs completed under the NWPR may or may not reliably describe the extent of jurisdictional waters on a parcel—regardless of any action that USACE may or may not take. USACE district and division regulatory staff are responding to inquiries from NWPR AJD holders and are working with them to address issues or requests related to their AJDs or proposed projects affecting waters of the United States. Several districts have also conducted public outreach regarding the vacatur of the NWPR at the local level, and districts have been encouraged to reach out to individual NWPR AJD holders to discuss the implications of the vacatur of the NWPR when the district determines it appropriate and prudent to do so.

Any permittee who obtained a permit prior to the vacatur of the NWPR that was based on a NWPR AJD can continue to work under their permit without risk of USACE enforcement action, provided that the work adheres to all of the permit's terms and conditions. It would, however, not be appropriate to make a blanket statement on USACE enforcement as the USACE does not have sole enforcement authority under the CWA. Furthermore, individual circumstances will vary and such a statement could be interpreted as a blanket authorization for entities to move forward in reliance on NWPR AJDs, a position that is inconsistent with the interpretation of the Court's vacatur. The USACE remains committed to working proactively with all NWPR AJD holders to ensure a full understanding of the options available to them to enable informed decision making.

11. Lower Mon Project

The most recent Corps Fact Sheet for the Lower Mon Project, dated March 6, 2022, includes the construction of two new larger lock chambers at Locks & Dam #4 at Charleroi. The current estimated cost for the Lower Mon Project is just over \$1.2 billion and is scheduled for completion in 2026. This price does not include the second lock at Charleroi.

11. Question: General Spellmon, when is the second lock at Charleroi scheduled to be completed, and at what additional cost?

Answer: Although the authorized project includes the construction of two new larger lock chambers at Lock and Dam 4 (Charleroi), USACE decided to defer construction of the landside lock chamber at Charleroi until the mid-2050s because over 90% of the project benefits could be achieved without the landside lock. USACE also determined that a Post-Authorization Change Report (PACR) will be required if the landside lock chamber is pursued in the future. The Pittsburgh District estimates the new Charleroi River Chamber will be operational by summer 2024. Additionally, the District completed an extension of the Dam's stilling basin in the summer of 2022.

THURSDAY, APRIL 28, 2022.

**FISCAL YEAR 2023 BUDGET REQUEST FOR THE
DEPARTMENT OF ENERGY**

WITNESS

**HON. JENNIFER M. GRANHOLM, SECRETARY, U.S. DEPARTMENT OF
ENERGY**

Ms. KAPTUR. Good afternoon. I now call to order the hearing on the fiscal year 2023 budget request for the Department of Energy. This is a hybrid hearing. So, we need to address a few house-keeping matters first. For the members joining virtually, once you start speaking, there is a slight delay before you are displayed on the main screen. Speaking into the microphone activates the camera displaying the speaker on the main screen. Do not stop your remarks if you do not immediately see the screen switch. If the screen does not change after several seconds, please make sure you are not muted.

To minimize background noise and ensure the correct speaker is being displayed, we ask that you remain on mute unless you have sought recognition. To eliminate inadvertent background noise, I, or staff that I designate, may mute participants' microphones when they are not recognized. And yesterday, everyone did a beautiful job on behaving on that one. Members are responsible for muting and unmuting themselves. And if you are appearing virtually and I notice when you are recognized that you have not unmuted yourself, I will ask the staff to send you a request to unmute yourself. Please then accept that request so you are no longer muted.

In terms of the speaking order, we will begin with the chair and ranking member. Then members present at the time the hearing is called to order will be recognized in order of seniority, followed by members not present at the time the hearing is called to order.

Finally, House rules require me to remind you that we have set up an email address to which members can send anything they wish to submit in writing at any of our hearings. That email address has been provided in advance to your staff.

I now recognize myself for 5 minutes for my opening statement on the fiscal year 2023 budget request for the Department of Energy.

We want, especially, to thank Secretary Granholm for joining us today. And I am so grateful to have a fellow Great Lakes colleague with such a distinguished career as America's Secretary of Energy. We warmly welcome you back.

We gather today to discuss the important work of the Department of Energy in ensuring American energy independence, which is fundamental to our national security. However, as we gather, halfway around the world energy insecurity in Europe is having a

profound impact on Russia's war on Ukraine. We are all witnessing a critical test to liberty's survival with energy as a lynchpin.

I am proud of our efforts in this Congress and the efforts of President Biden to support Ukraine as she fights for her freedom. But Europe cannot be free, nor escape the consequences of tyranny, if it continues its reliance on Russian gas and energy that fuels Putin's war. America has led the world in ending its imports of Russia's blood-soaked energy that props up that criminal regime, and it is time for the rest of the world to do the same.

This pivotal moment is a blunt reminder how important U.S. energy independence is to our national security. In the second half of the last century, America slid into reliance on imported oil. During the 1970s, our Nation learned the hard way the danger of reliance on imported energy as the first Arab oil embargo threw us into deep recession.

President Jimmy Carter's foresight and leadership, with bipartisan support in Congress, created the Department of Energy in 1977. Because of the remarkable work undertaken over decades since that time by both public and private sector leaders, our Nation now leads the world as the largest net exporter of natural gas. We lead the world in renewables, and the new energy sciences that will hopefully usher us into the hydrogen and advanced nuclear age. In almost every energy sector known to humanity, our Nation is pushing the envelope of innovation. The Department of Energy is responsible for addressing the most pressing energy, environmental, and nuclear security issues of our time. The Department's pioneering investments in science, technology, and applied systems are unparalleled leading to breakthroughs that were never before thought possible.

While the 21st century brings new and complicated challenges, it also presents us with an array of opportunities, including the opportunity to safeguard our national security through energy security, by reducing American dependence on foreign adversaries; the opportunity to tackle the climate crisis while growing the economy and supporting living wage jobs; the opportunity to advance cutting-edge science and innovation to sustain life on Earth, protect our environmental treasures, and expand our global competitiveness; and the opportunity to cost effectively provide for the Nation's nuclear deterrent while it assuring nuclear nonproliferation. We must make more progress for America, invest in new energy technologies, and advance the world-class research that unlocks our full scientific potential.

So, how do we meet these goals? We must invest in the energy innovations being led by the Department of Energy that preserve American energy independence, conserve our environment, and spur good-paying middle-class jobs for our workers and families. This budget request proposes necessary investments to continue innovations that will further push the energy revolution, keep the U.S. as a global leader, and reduce the influence of foreign energy sources. It calls for investments across the board, from basic research to conservation and capturing waste energy, to developing new, clean energy technologies, and to hardening the electric grid against disasters and cyber threats.

This budget request makes a serious investment in the Department's most meaningful meet the streets effort, the Weatherization Assistance Program. It is pivotal to the mammoth task of meeting energy conservation horizons for existing structures and neighborhoods by reducing burdensome energy costs on families and seniors, especially those struggling to make ends meet. And let me express my disappointment that one month after the administration's budget was released, we have not received a full set of the required supporting budget materials, and this must be rectified promptly for future years.

With that, I will close my remarks and I will thank you, Madam Speaker, for being here today. We look forward to discussing this request and I would like to turn to our noble ranking member, Mr. Simpson, for his opening remarks.

[The information follows:]



Chairwoman Marcy Kaptur
Subcommittee on Energy and Water Development
FY 2023 Budget Request for the U.S. Department of Energy
Opening Statement As Prepared
April 28, 2022

Thank you, Secretary Granholm, for joining us today. I'm so grateful to have a fellow Great Lakes colleague with such a distinguished career as our Secretary of Energy.

I am pleased that we can gather today to discuss the important work of the Department of Energy in ensuring American energy independence, which is fundamental to national security. However, as we gather, half way around the world, energy insecurity in Europe is having a profound impact on Russia's war on Ukraine. We are all witnessing a critical test to Liberty's survival. I am proud of our efforts in this Congress, and the efforts of President Biden, to support Ukraine as she fights for her freedom. But Europe cannot be free – nor escape the consequences of tyranny – if it continues its reliance on Russian gas and energy that fuels Putin's war. America has led the world in ending imports of Russia's blood-soaked oil that props up that criminal regime. It's time for the rest of the world to do the same.

This pivotal moment is a blunt reminder how important our energy independence is to national security. In the second half of the last century, America slid into reliance on imported oil. In the 1970s, our nation learned the hard way the danger of reliance on imported energy with the first Arab oil embargo. President Jimmy Carter's foresight and bipartisan support in Congress created the Department of Energy. Because of the remarkable work undertaken since that time by both public and private sectors, our nation now leads the world as the largest net exporter of natural gas. In almost every energy source known to humanity, our nation is pushing the envelope of innovation.

DOE is responsible for addressing the most pressing energy, environmental, and nuclear security issues of our time. The Department's pioneering investments in science, technology, and applied systems are unparalleled, leading to breakthroughs that were never before thought possible. While the 21st century brings new and complicated challenges, it also presents us with an array of opportunities, including:

- the opportunity to safeguard national security through energy security by reducing American dependence on foreign adversaries;
- the opportunity to tackle the climate crisis while growing the economy and supporting living-wage jobs;
- the opportunity to advance cutting-edge science and innovation to sustain life on Earth, protect our environmental treasures, and expand our global competitiveness; and
- the opportunity to cost-effectively provide for the nation's nuclear deterrent while assuring nuclear nonproliferation.



We need to make more progress for America, invest in new energy technologies, and advance the world class research that unlocks our full scientific potential.

So, how do we meet these goals? We must invest in the energy innovations being led by DOE that preserve American energy independence, conserve our environment, and spur good-paying, Middle Class jobs for our workers and families.

This budget request proposes necessary investments to continue innovations that will further push the energy revolution, keep the U.S. as a global leader, and reduce the influence of foreign energy sources. It calls for investments across the board – from basic research, to conservation and capturing waste energy, to developing new, clean energy technologies, and to hardening the electric grid against disasters and cyber threats.

This budget request makes a serious investment in DOE's most meaningful "meet the streets" effort – the Weatherization Assistance Program. It is pivotal to the mammoth task of meeting energy conservation horizons for existing structures and neighborhoods by reducing burdensome energy costs on families and seniors, especially those struggling to make ends meet.

Let me express my disappointment that – one month after the Administration's budget was released – we have not received a full set of the required supporting budget materials. This must be rectified promptly and for future years.

With that, I'll close my remarks. Thank you, Madam Secretary, for being here today. We look forward to discussing this request.

I'd like to turn to our Ranking Member, Mr. Simpson, for his opening remarks.

Mr. SIMPSON. Thank you, Chairwoman Kaptur, and welcome, Secretary Granholm. It is good to have you and meet you in person and getting back to normal hearings. I kind of look around and go, so, this is what our hearing room looks like. It is nice to be back in our hearing room, but thank you for being here. I know you have already suffered through one hearing with the Energy and Commerce Committee all morning long. These hearings in our committee are generally focused on the budget and the direction the Department is taking and stuff. So, we will have some questions about that, but thank you for being here today to review the fiscal year 2023 budget request for the Department of Energy.

There are several individual items in this budget request that I support. For example, increased funding for the National Reactor Innovation Center. Naval reactors are important programs that I am very interested in. Unfortunately, the DOE budget request is indicative of the administration's overall budget request. And I think it is out of balance between defense and nondefense needs and inclusive of budget gimmicks to avoid setting real priorities.

The request proposes a 17 percent increase in nondefense programs and only a 2 percent increase for defense programs. In light of today's runaway inflation, a 2 percent increase is effectively a cut. Within nondefense programs, I am very concerned that certain critical issues are not getting the attention they deserve, in particular, the request for the nuclear energy program is a mere \$10 million or less than 1 percent above enacted, after counting for the proposed budget structure changes.

In contrast, the increase for energy efficiency and renewable energy, which I support the activities of that program, but it is more than 1.7 billion or more than 54 percent increase. It is a fact that achieving low-carbon energy goals must include advanced nuclear. Not only is it a zero-emission source, but it is a baseload power that helps ensure reliability of the grid, especially as more intermittent sources like wind and solar are added. We must ensure that the U.S. is a leader in developing advanced nuclear technologies for deployment here at home and around the globe.

Second, as the chairman said, I am concerned about cybersecurity. It is now more than a month after the budget submission and we just barely got the budget justification for the materials for CESER. We know the threats are serious. The Colonial Pipeline incident occurred right around the time of last year's DOE budget hearing and recent global events have opened many more eyes to the cyber threats facing our energy sector. And I can't tell you how important it is that we receive the budget justification materials so that we can actually do our job.

Third, the Department's efforts related to rare earths and critical minerals appear scattered and unfocused, not only with the Department of Energy, but with the other agencies that have a role to play in developing our rare earths and critical minerals here in this country. The primary endeavor seems to be the Global Clean Energy Manufacturing Initiative. This new program, though, is proposed as mandatory funding. This administration is not the first to include mandatory funding proposals within the budget request, but that doesn't change the fact that it is simply a gimmick to allow the administration to say it supports the issue without hav-

ing to count the costs or make choices to incorporate it into their annual budget appropriations.

Secretary Granholm, I appreciate you being here again today, and there are many things that we agree on. Some things that we have different priorities that we will love to discuss with you, and I look forward to hearing. So, thank you for being here today.

[The information follows:]

OPENING STATEMENT
The Honorable Mike Simpson
Ranking Member, Energy and Water Development Subcommittee
House Committee on Appropriations

Hearing on the Department of Energy's
Fiscal Year 2023 Budget Request
April 28, 2022

Thank you, Chairwoman Kaptur. I'm pleased to join you in welcoming Secretary Granholm to the Committee to discuss the fiscal year 2023 budget request for the Department of Energy.

There are several individual items in this budget request that I support. For example, increased funding for the National Reactor Innovation Center and for Naval Reactors.

Unfortunately, the DOE budget request is indicative of the Administration's overall budget request – out of balance between defense and non-defense needs and inclusive of budget gimmicks to avoid setting real priorities.

The request proposes a 17 percent increase for non-defense programs and only a 2 percent increase for defense programs. In light of today's runaway inflation, a 2 percent increase is effectively a cut.

Within non-defense programs, I'm very concerned that certain critical issues are not getting the attention they deserve. In particular, the request for the Nuclear Energy program is a mere \$10 million, or less than 1 percent, above enacted, after accounting for proposed budget structure changes. In contrast, the increase for Energy Efficiency and Renewable Energy activities is more than \$1.7 billion, or more than 54 percent.

It is a fact that achieving any low-carbon energy goals must include advanced nuclear. Not only is it a zero-emission source, but it is baseload power that helps ensure reliability of the grid, especially as more intermittent sources, like wind and solar, are added. We must ensure the U.S. is a leader in developing advanced nuclear technologies for deployment here at home and around the globe.

Second, I'm concerned about cybersecurity. It is now more than a month after the budget submission, and we still don't have the budget justification materials for the CESER office. I hope the Department will demonstrate that it is taking the threats seriously by delivering its budget materials within the next few days. Because we know the threats are serious. The Colonial Pipeline incident occurred right around last year's DOE budget hearing. And recent global events have opened many more eyes to the cyber threats facing the energy sector.

Third, the Department's efforts related to rare earths and critical minerals appear scattered and unfocused. The primary endeavor seems to be the Global Clean Energy Manufacturing initiative. This new program, though, is proposed as mandatory funding. This Administration is not the first to include mandatory funding proposals within the budget request. But that doesn't change the fact that it is simply a gimmick to allow the Administration to say it supports the issue, without having to count the costs or make choices to incorporate it into annual appropriations.

Secretary Granholm, I appreciate you being here today to shed as much light as you can on DOE's budget request. I know my colleagues and I look forward to working with you to move forward a budget that will strengthen our national security and advance our energy independence.

I thank Chairwoman Kaptur for calling this hearing, and I yield back.

Ms. KAPTUR. Thank you very much, Ranking Member Simpson. We are all very grateful that Secretary Granholm is joining us here today. And we know that she has already had quite a jam-packed day testifying this morning in front of the Committee on Energy and Commerce, and we know how rough they are to wrestle with. We all welcome your observations of how the Department of Energy can increase energy security while confronting the climate crisis and creating more and better jobs here at home.

Following a bipartisan confirmation vote, Secretary Granholm became just the second woman to lead the U.S. Department of Energy. Previously, Secretary Granholm was the first woman elected governor of Michigan, serving two terms from 2003 to 2011. We heard her voice in Ohio, so thank you.

As governor, Jennifer Granholm faced economic downturns caused by the Great Recession and meltdown in the automotive and manufacturing sectors. She successfully led efforts to diversify the state's economy, strengthen its auto industry and give them new hope, preserve the manufacturing sector, and add emerging sectors such as clean energy to Michigan's economic portfolio.

With that amazing experience, I appreciate her leadership at the Department of Energy and applying those lessons across our country. She truly understands the importance of American workers and communities at risk of being left behind and those who have endured so much. That is rare here in Washington, and I am excited that we can work with her closely.

Thank you for taking time to be here today. Without objection, your written statement will be put into the record. Please feel free to summarize your remarks, Secretary Granholm.

Secretary GRANHOLM. Thank you so much, Madam Chairwoman. So great to be here with you and to share so many similar sentiments. And Ranking Member Simpson, I am so pleased to be here with you as well in person, and I am grateful for the conversations that we have had. And members of the committee, so nice to see you as well. Look forward to a good conversation.

I am grateful to be able to discuss the President's 2023 budget for the Department of Energy. I am very grateful that you have supported the Department. Many of you, including through the 2022 omnibus legislation, and I certainly applaud all of your work to ensure reliable and clean and affordable energy for all Americans. It is an effort I am proud to play a part of as the 16th Secretary of Energy.

Under the Biden administration, the Department of Energy is really committed to increasing energy affordability, energy resilience, energy security, and we are committed to securing the clean energy supply chains that are needed to reduce our reliance on unabated fossil fuels and increase our energy independence. So, we are committed to enhancing America's competitiveness by accelerating scientific discovery and innovation. And those commitments are reflected in this budget.

I look around, the world shows that this is the right focus with the right priorities for this moment in history. Right now, we face a trio of crises. One is climate change. Two is COVID-19's effect on supply chains. And three is Russia's invasion of Ukraine.

The first of those crises cost the United States climate change \$148 billion last year alone in dealing with extreme weather events. And the second two crises are costing American families right now, as they see prices rising from gas stations to grocery stores.

Let me be clear that the Department is using every tool available to increase oil supply. And that is why last month, President Biden authorized the release of a million barrels per day from our strategic petroleum reserve over the next 8 months, 180 million barrels total, coordinated with international allies and partners who also agreed to release in a coordinated fashion another 60 million barrels. And I appreciate Congress' support of President Biden's ban on Russian energy imports.

We are also working to offer relief to American families, including through the \$3½ billion for the Weatherization Assistance Program that was provided in the Bipartisan Infrastructure Law. But ultimately, these crises tell us that global security, energy, independence, energy affordability, all depend on a shift toward American-made clean energy. Fortunately, Congress, through the Energy Act 2020 and the Bipartisan Infrastructure Law, has invested in DOE's ability to build many of these clean energy technologies, unabated fossil fuel energy technologies—abated fossil fuel technologies here at home with American parts and American labor. I am grateful to the members of this committee for the faith that they have placed in our Department to oversee many of these investments and the new offices and the ambitious clean energy goals that come with them.

We are hard at work implementing this legislation. Most recently, for example, I know many of you are interested in this, the DOE began accepting applications for the \$6 billion Civilian Nuclear Credit Program, which is going to keep existing nuclear energy online and maintain that reliable, clean source of baseload power. This \$62 billion investment from the infrastructure law that flows to the Department of Energy is an historic long-term investment in projects that will serve our Nation for decades, but alone, it is on its own, it is not sufficient to address the full suite of energy challenges that we face. It is why our request includes base year funding efforts to complement the infrastructure law and to maximize its impact to lower costs and to make energy secure and provide us with clean, reliable American power.

The request also supports the Department's innovative capacity within our Office of Energy Efficiency and Renewable Energy, our Office of Science, our 17 national labs, all to maintain America's competitive edge. And our budget includes, of course, funding across a range of DOE missions that have kept our country safe from environmental management to nuclear security. So, I am proud of DOE's work to confront our Nation's most pressing challenges.

And I am excited to lead this amazing agency as we implement Congress' legislative actions from the infrastructure law and the Energy Act to those still to come, including the Bipartisan Innovation Act, which we hope is passed and President Biden's full agenda for building a better America. So, thank you for the opportunity to be here today, and I am happy to answer any questions.
[The information follows:]

Testimony of Secretary Jennifer M. Granholm

U.S. Department of Energy

Before the

**U.S. House Committee on Appropriations
Subcommittee on Energy and Water Development**

April 28, 2022

Chairwoman Kaptur, Ranking Member Simpson, and Members of the Committee, it is an honor to appear before you today to discuss the President's FY 2023 Budget request for the Department of Energy ("the Department" or "DOE").

It is a privilege to serve as the 16th Secretary of Energy and have the responsibility of leading the Department in delivering technological advancements and scientific discoveries, advancing the energy, economic, and national security of the United States, and combatting the climate crisis. DOE is committed to securing and advancing environmental justice and equity and spurring economic opportunity for disadvantaged communities that have been historically marginalized and overburdened by pollution and experience underinvestment in essential services. DOE supports these missions through transformative science and technology solutions, partnerships with states, Tribes, municipalities, communities, and other nations, and the Nation's best scientists and scientific facilities at the National Laboratories.

Budget Topline and the Passage of the BIL

DOE's FY 2023 Budget Request is \$48.2 billion, an increase of \$8.6 billion or +21.7 percent over the FY 2021 Enacted Level, and an increase of \$3.3 billion (+7.4%) over the FY 2022 enacted level. The request helps to build a better, stronger, more secure, and more inclusive America by creating jobs through investments in clean energy and infrastructure. The

Investments proposed in the FY 2023 Budget Request are necessary for the long-term transition of most of the economy from fossil fuels to domestically produced renewable energy. This will end our dependence on volatile fossil fuels to drive our cars, transport our goods, heat and cool our homes, and much more. It will also help us slow the destructive impacts of climate change.

I would like to highlight that resources provided through the FY 2023 Budget will complement, not duplicate, the \$62 billion Congress provided the Department in the Bipartisan Infrastructure Law, or BIL. This \$62 billion is a down payment that will supercharge DOE's work on clean energy demonstrations, advanced manufacturing, grid infrastructure, and low-income home weatherization. The FY 2023 Budget complements the BIL to bolster the Department's resources to cut energy costs for households and businesses, advance clean energy innovation, and generate good-paying, union jobs.

Ukraine and the Need to Continue the Clean Energy Transition

I am appearing before you at a troubling, shocking time in world history. The bravery of the Ukrainian people should inspire all of us to do our part. In addition to the tragic impact on the people of Ukraine, I am focused on the enormous consequences of Russia's invasion on the future of energy. I appreciate the strong message Congress has sent, stating clearly along with President Biden to ban Russian oil imports. Vladimir Putin's actions have sent the oil market reeling, raising oil prices and the price of gas at the pump, and affecting our daily lives, which underscores the need for clean energy deployment to increase national security through further energy independence. Stated bluntly, the situation in Ukraine and the impact on gas prices has highlighted the national security importance of our energy investments. We must rapidly deploy homegrown clean energy technologies like renewable energy and energy efficient electric appliances to stop relying on the volatile oil market and create price stability for American households and businesses. The FY 2023 request includes new and expanded investments to increase our energy security and deploy domestically manufactured clean energy.

Moving Beyond the COVID-19 Pandemic

Additionally, DOE's FY 2023 request will not only move DOE, its workforce, and the Nation toward a clean energy future, but also serve as a brick in the path to help the Nation move beyond the COVID-19 pandemic and build a better, stronger, more secure, and more inclusive America. DOE's 17 National Laboratories have and will continue to play a foundational role in U.S. leadership in science and technology and in tackling the pandemic and the most pressing challenges of our time as they emerge. They are our solutions factories where scientific collaboration takes place, where world-leading experimental tools provide crucial insights into nature, and where solutions to our most urgent challenges are being developed. It was at DOE's scientific user facilities where researchers from the National Laboratories, universities, and industry collaborated to reveal the structure of the spike protein on SARS CoV-2, the virus that causes COVID-19, using X-ray and neutron sources, and where vaccine binding was modeled using DOE's high-performance computers.

Seeking to return to yesterday's normal is not realistic, nor is it enough. It is time to use the science and solutions from DOE's laboratories and help the Nation address our challenges while reimagining our energy economy. And, as America goes back to work, we are going to help rebuild and refocus by creating millions of good-paying energy jobs in communities all over the country. The FY 2023 Budget Request will continue to advance our core science and security missions and create jobs supporting our clean energy infrastructure.

Cutting Energy Costs for Households and Businesses

The FY 2023 budget request bolsters DOE's efforts to cut energy costs for households and businesses while making the Nation more resilient to geopolitical disruptions that hurt Americans at the pump and in the pocketbook. Funding for the Weatherization Assistance Program (WAP) including for a new pilot initiative to drastically reduce costs for households in need, will save low-income households money on their home energy bills.

The budget request includes \$100 million for this new pilot program, known as the Low-Income Home Energy Assistance Program (LIHEAP) Advantage Pilot, to invest in home energy efficiency and energy cost-saving retrofits, including distributed energy solutions. The LIHEAP Advantage Pilot program will use innovative ways to design and expand the combined impact of WAP, the Department of Health and Human Service's LIHEAP program, and related low-income energy assistance programs. More than 33 million households are eligible for energy assistance through LIHEAP to help them cover often-burdensome energy bills. These households could save significant money on their bills if they had access to energy-saving retrofits. The LIHEAP Advantage Pilot will save low-income households money on their bills through energy efficiency and clean energy, thereby reducing the demand for LIHEAP bill assistance and enabling taxpayer dollars to support even more people in need. The upgrades will also make the homes more comfortable and reduce harmful indoor air pollution.

Additionally, programs like the State Energy Program and Energy Future Grants will help communities, states, municipalities, and Tribes improve energy planning and meet energy needs with low-cost clean energy. Robust funding for the Office of Energy Efficiency and Renewable Energy will help cut energy bills by expanding access to rooftop solar and cost-saving energy efficiency upgrades. Moreover, the request expands DOE's efforts to support resilient supply chains and domestic manufacturing for critical clean energy materials and technologies. A new Solar Manufacturing Accelerator will help DOE shore up supply chains for solar energy and make us more resilient to geopolitical disruptions. The new Global Clean Energy Manufacturing initiative will enable DOE to partner with friendly and allied nations to develop secure supply chains for critical materials.

FY 2023 President's Budget Request

President Biden's proposed FY 2023 Budget request for the Department of Energy invests \$48.2 billion in discretionary funding to advance key priorities including creating jobs through clean energy projects, bringing America to the forefront of clean energy innovation, tackling the climate crisis with the urgency that science demands, investing in communities that have been

left behind, cleaning up the environmental legacy of the Manhattan Project and Cold War, and ensuring the safety and security of the nuclear stockpile.

In addition to the \$2.1 billion for the new Under Secretary for Infrastructure, the request includes \$14.7 billion for the Under Secretary for Science and Innovation focused on fundamental science, clean energy innovation and our core research, development, and demonstration (RD&D) missions across existing programs and our National Labs. Of the \$14.7 billion, \$7.8 billion is for the Office of Science (SC) for increased investments in Administration priorities including basic research on climate change and clean energy, artificial intelligence (AI) and machine learning (ML), and bio preparedness.

The request includes \$21.4 billion for the Under Secretary for Nuclear Security and Administrator, National Nuclear Security Administration to pursue three major national security missions: maintain a safe, secure, reliable, and effective nuclear weapons stockpile; reduce global nuclear threats and keep materials out of the hands of terrorists; provide safe and effective integrated nuclear propulsion systems for the U.S. Navy. These missions all require strong science, technology and engineering capabilities and a modern, revitalized infrastructure.

The Budget request also invests \$7.6 billion through the Office of the Environmental Management to continue cleanup of sites resulting from six decades of nuclear weapons development and production and Government-sponsored nuclear energy research. This sustains our investment in the EM mission to clean up World War II and Cold War nuclear sites.

Modernizing Energy Infrastructure through a New Under Secretary

To implement the BIL, the FY 2023 Budget Request reflects DOE's February 2022 realignment to better execute DOE's mission and ensure that the Department has the structure needed to effectively implement the clean energy investments prescribed in the BIL and the Energy Act of 2020. The new organizational structure establishes two Under Secretaries: one focused on fundamental science and clean energy innovation and the other focused on deploying clean infrastructure. This new structure will maximize the effectiveness of BIL programs and support

DOE's ongoing work to reduce energy costs through low-cost clean resources and achieve carbon-free electricity in the U.S. by 2035 and a net zero economy by 2050. These structural changes set DOE up for success in carrying out all our missions – and to carry them forward for the coming years and decades. Our strategic realignment optimizes the world-class expertise of our talented staff and will maximize our ability to accelerate the technologies needed to grow clean energy jobs and fight the climate crisis.

The FY 2023 Budget Request includes \$2.1 billion for the new Office of the Under Secretary for Infrastructure focused on clean energy infrastructure — large-scale demonstration and deployment. The new office centralizes existing program offices focused on major demonstration and deployment with newly created offices. The existing offices that moved to the new Under Secretary include DOE's Loan Programs Office, Office of Indian Energy, Office of Clean Energy Demonstration, Office of Cybersecurity, Energy Security, and Emergency Response (CESER), and the Federal Energy Management Program.

Funding for the Under Secretary for Infrastructure's programs is critical to reducing energy costs for households and businesses, rounding out DOE's portfolio of innovation investments, and ensuring a clean, safe, resilient, and secure energy system. The FY 2023 budget request includes:

- \$90 million for the Grid Deployment Office to catalyze the development of new and upgraded high-capacity electricity transmission and distribution systems nationwide, working with electricity system partners and stakeholders to ensure a reliable, resilient, and equitable grid that connects consumers to lower-cost and cleaner electricity options. The FY 2023 request supports two new programs, the Wholesale Electricity Market Technical Assistance and Grants, to improve electricity markets, and the Interregional and Offshore Transmission Planning programs, which will address barriers to offshore wind deployment.
- \$727 million for the State and Community Energy Program to work more closely with states, localities, and communities to reduce energy costs for households and businesses,

deploy low-cost clean energy solutions, weatherize at least 50,000 homes through the Weatherization Assistance Program, and improve energy system planning;

- \$27 million for Manufacturing and Energy Supply Chains to support U.S. competitiveness in manufacturing next-generation energy technologies, ensure a strong energy industrial base, build resilient domestic supply chains, and help small- and medium-sized manufacturers improve productivity and competitiveness, reduce waste, and save energy;
- \$214 million for the Office of Clean Energy Demonstrations (OCED) to initiate a new program to support full-scale and commercial-scale demonstrations that address integration issues of renewable energy into the U.S. transmission and distribution grids. OCED will also house the Advanced Reactor Demonstration Program, which focuses on the construction of demonstration reactors in the near- and mid-term that are safe and affordable to build and operate;
- \$170 million for the newly established Federal Energy Management Program (FEMP) to help federal agencies meet their building infrastructure and fleet modernization needs, by accelerating the implementation of energy and water conservation measures and improving energy resilience, including by funding the Assisting Federal Facilities with Energy Conservation Technologies (AFFECT) program and launching the Net-Zero Labs Initiative to support the National Laboratories in decarbonization projects.
- \$150 million for the Office of Indian Energy Policy and Programs for financial and technical assistance to promote energy development, efficiency, and use, reducing or stabilize energy costs, strengthening energy and economic infrastructure, transitioning the national Tribal Colleges and Universities to renewable energy, and bringing electrical power and service to Indian land, homes, and Alaskan Native communities;

- \$162 million, net of offsetting collection, for the Loan Programs Office, which includes \$150M for the Title 17 Innovative Technology Loan Guarantee Program credit subsidy costs, associated with an additional \$5 billion of loan guarantee authority open to a range of eligible projects that will help drive innovation, increase U.S. competitiveness, and support domestic manufacturing and supply chains; and
- \$202 million for the Office of Cybersecurity, Energy Security, and Emergency Response (CESER), which leads the Department's efforts to secure U.S. energy infrastructure against all hazards, reduce the risks of and impacts from cyber events and other disruptive events, and assist with restoration activities.

Office of Clean Energy Demonstrations

DOE's FY 2023 Budget Request supports the BIL-established Office of Clean Energy Demonstrations (OCED), which will accelerate clean energy innovation through major demonstrations of the clean energy technologies that have been invented and improved by the National labs and DOE's R&D programs. OCED will support scale-up of technologies including clean hydrogen, carbon capture, grid-scale energy storage, advanced nuclear reactors, and more. The FY 2023 Budget Request provides \$214 million for OCED, which will serve as a project management center of excellence supporting the applied programs and other offices as needed to ensure a consistent approach to implementing capital-intensive late-stage technology demonstrations across DOE. OCED is implementing the more than \$20 billion appropriated in the BIL for the new office to deliver cutting edge clean technologies to communities and businesses across the country. These demonstrations will fund projects totaling hundreds of millions or multiple billions of dollars in scale and will unlock massive follow-on investment from the private sector to deploy these technologies, delivering clean energy to communities across the country.

With FY 2023 funding, OCED will initiate a new \$150 million program to support full-scale and commercial-scale demonstrations that address integration issues of renewable energy into the U.S. transmission and distribution grids. OCED will also provide \$25 million for the Advanced

Reactor Demonstration Program, which focuses on the construction of demonstration reactors in the near- and mid-term that are safe and affordable to build and operate.

Demonstration projects prove the effectiveness of innovative technologies in real-world conditions at scale in order to pave the way towards widespread adoption and deployment. The founding of this office represents a new chapter that builds on DOE's expertise in clean energy research and development. OCED expands DOE's scope to fill a critical innovation gap on the path to net-zero emissions by moving clean energy technologies out of the lab and into local and regional economies across the country, proving the value of technologies that can deliver for communities, businesses, and markets.

OCED's BIL programs also include billions of dollars to invest in demonstration projects in rural areas and economically hard-hit communities that are experiencing the first and worst impacts of climate change. The office will consistently engage environmental groups, labor, and communities to help shape program development and execution. In addition to the large-scale projects, DOE will continue to support many smaller-scale pilots and demonstrations that are needed to meet the Administration's climate goals.

Supporting Innovation through Research, Development, and Demonstration

In FY 2023, DOE will continue to play an important role in advancing and shaping clean energy innovation. Through its applied sciences offices, the Department catalyzes the discovery and development of new clean energy technologies and prioritizes scientific innovation as a cornerstone of U.S. economic prosperity.

In order to support the innovation efforts of DOE's applied offices, the FY 2023 Budget Request includes:

- \$4.0 billion for the Office of Energy Efficiency and Renewable Energy (EERE) to accelerate the research, development, demonstration, and deployment (RDD&D) of technologies and solutions to reduce energy costs for households and businesses, increase

U.S. competitiveness, create good-paying union clean energy jobs, and equitably transition America to net-zero greenhouse gas emissions economy-wide by no later than 2050;

- \$297 million for the Office of Electricity (OE) to lead the Department’s efforts to strengthen, transform, and improve electricity delivery infrastructure so consumers have access to resilient, secure, and clean sources of electricity;
- \$1.675 billion for the Office of Nuclear Energy (NE) supports the diverse civilian nuclear energy programs of the U.S. Government and Federal efforts to research and develop nuclear energy technologies, including generation, safety, and security technologies. The Request consolidates and focuses nuclear energy related research and development (R&D) activities conducted by small businesses and supports university level engineering and science through competitively awarded, university led research and development and infrastructure, universities’ research reactor fuel services, scholarships, and fellowships;
- \$893.2 million for the Fossil Energy and Carbon Management (FECM) office to conduct research, development, demonstration and deployment (RDD&D) that focuses on technologies to reduce carbon emissions and other environmental impacts of fossil fuel production and use, particularly the hardest-to-decarbonize applications in the electricity and industrial sectors; and
- \$700 million for the Advanced Research Projects Agency – Energy (ARPA-E) to identify and promote revolutionary advances in energy and climate-related applied sciences, translating scientific discoveries and cutting-edge inventions into technological innovations.

Progressing Scientific Research

The FY 2023 Budget Request includes \$7.8 billion for the Office of Science (SC) to increase investments in Administration priorities including basic research on climate change and clean

energy, fundamental science to transform manufacturing, bio-preparedness, and participation and retention of underrepresented groups in research activities. SC's core mission is to deliver both the scientific discoveries and major scientific tools that will transform our understanding of nature and advance the energy, economic, and national security goals of the U.S. It is the largest Federal sponsor of basic research in the physical sciences and the lead in supporting fundamental scientific research for our energy future. Over decades, the investments and accomplishments in basic research and enabling research capabilities we have made have provided the foundation for countless new technologies that have benefited large and small businesses and launched new industries. These investments have contributed immensely to our Nation's economy, national security, and quality of life.

SC continues this work today, and the FY 2023 Request also supports ongoing investments in priority areas including clean energy, microelectronics, critical materials, quantum information science (QIS), artificial intelligence (AI) and machine learning (ML), and exascale computing, while managing the risks that certain foreign governments, including the People's Republic of China, Russia, Iran, and others, seek to acquire our technologies, using both illicit strategies and legal means that pose unacceptable risks to research security and integrity. DOE manages these risks while maintaining an open, collaborative, and world-leading enterprise.

Energy Earthshots Initiative

President Biden declared to the world in 2021 that America is back at the table for climate action and followed it up with the FY 2022 request which included new funding opportunities for technologies ranging from carbon capture to geothermal energy to extracting critical minerals from coal waste. The climate crisis is our generation's moonshot. Less than a decade after Kennedy declared our Nation's choice to go to the moon we planted an American flag on that cratered surface, and today we choose to solve the climate crisis.

The FY 2023 Request continues that fight with its inclusion of activities supporting the Energy Earthshots Initiative. DOE's Energy Earthshots Initiative will accelerate breakthroughs of more abundant, affordable, and reliable clean energy solutions within the decade. They will drive the

major innovation breakthroughs that we know we must achieve to solve the climate crisis, reach our 2050 net-zero carbon goals, and create the jobs of the new clean energy economy. The Energy Earthshots Initiative targets the most challenging technical problems across our energy economy and sets ambitious but achievable cost and performance goals to accelerate the necessary innovation. DOE plans to launch additional decadal goals in FY 2023 to address remaining solutions that are critical to the climate goals and require coordinated, targeted efforts from DOE to unlock.

Sustaining Investment in Environmental Clean-up

With the FY 2023 Budget Request, DOE is poised to take its environmental management commitments to the next level. The Office of Environmental Management (EM) supports DOE to meet the challenges of the Nation's Manhattan Project and Cold War legacy responsibilities. The FY 2023 Budget Request includes \$7.6 billion for EM to cleanup millions of gallons of liquid radioactive waste, thousands of tons of spent (used) nuclear fuel and nuclear materials, disposition of large volumes of transuranic and mixed/low-level waste, huge quantities of contaminated soil and water, and deactivation and decommissioning of thousands of excess facilities.

DOE's environmental management mission is about so much more than just knocking down buildings and cleaning waste out of tanks. It's about keeping promises we have made to the American people by addressing the remnants of our nuclear programs. DOE has an obligation to ensure the air, the water, and the communities surrounding our programs are safe, and that the families in those communities can thrive. The FY 2023 Request will also help deepen EM's talent pool in science, technology, engineering, and math to ensure that DOE's environmental management strategy and workforce is at its best to ensure that clean energy technologies we need to overcome climate change — like advanced nuclear — are safe and secure, so we can deploy them on a global scale.

Ensuring the Nation's Nuclear Security

DOE's FY 2023 Budget Request for the National Nuclear Security Administration (NNSA) is \$21.4 billion to support the security and safety of our Nation. The FY 2023 Budget Request ensures that NNSA can:

- Maintain a safe, secure, reliable, and effective nuclear weapons stockpile;
- Reduce global nuclear threats and keep materials out of the hands of terrorists;
- Provide safe and militarily effective integrated nuclear propulsion systems for the U.S. Navy;
- Strengthen key science, technology and engineering capabilities and revitalize the nuclear security infrastructure to be prepared for the future; and
- Modernize the nuclear security infrastructure and provide necessary federal oversight for growing mission requirements.

DOE's priorities for NNSA for FY 2023 reflect the increasingly complex geopolitical environment we face. Regrettably, during the invasion of Ukraine, the Russians announced their nuclear forces were moved to special combat readiness and they also took control of the Chernobyl nuclear exclusion zone and Ukraine's largest nuclear power plant. In other words, the Russians made nuclear threats part of the Ukrainian invasion. In addition, both China and Russia have been deploying more and new kinds of nuclear weapons systems. It is clear that in order to protect the American people and stay ahead of nuclear threats, NNSA must maintain a responsive posture while exercising responsible behavior. This budget request supports those objectives and is fully informed by the 2022 Nuclear Posture Review.

Weapons Activities

NNSA has the responsibility to design, build, and ensure the safety, security, and reliability of the Nation's nuclear stockpile. NNSA achieves this mission using dedicated national laboratories, captive production facilities, and a security site. These facilities provide world-class science and technology program that allows us to design and certify the stockpile without

testing and provide the manufacturing expertise to safely and securely produce weapons and materials needed to modernize the stockpile. The FY 2023 Budget Request provides \$16.5 billion for weapons activities and supports stockpile certification pursued hand-in-hand with weapons modernization programs and the revitalization of Cold War capabilities and infrastructure refurbishment to modernize and address the degradation to NNSA's facilities over the last 30 years.

NNSA is making real progress with significant achievements over the past year. In June 2021, NNSA completed the last production unit of the W80-1 Alt 369 warhead for the B-52s' air launched cruise missile, and in July completed the first production unit of the W88 Alt 370 warhead for the Navy's submarine-launched ballistic missile system. In November, NNSA's Weapons Programs reached a major milestone with the first production unit for the B61-12 Life Extension Program. NNSA is committed to working to produce 80 pits per year as close to 2030 as possible by establishing a production capability at two sites: Los Alamos National Laboratory (LANL) and Savannah River Site (SRS). Although there have been challenges with the schedule, we have been completely transparent with the Nuclear Weapons Council and Congress. A two-site approach enhances resiliency and flexibility, and we remain confident that we can mitigate any issues that we will have the capability to produce 80 pits per year by the mid-2030s, 40 years since we were last able to do so. We are working closely with the Department of Defense to make sure the stockpile will be militarily effective as pit production gets established. All these successes are the culmination of extensive collaboration across the Nuclear Security Enterprise.

Defense Nuclear Nonproliferation

The FY 2023 Budget Request supports NNSA's role in the protection of the American people not only through deterrence but also through a strong commitment to nonproliferation and arms control. NNSA has a duty to advance nonproliferation, counterproliferation, and counterterrorism. The FY 2023 Budget Request provides NNSA with \$1.9 billion to support the Office of Defense Nuclear Nonproliferation's efforts, including:

- Securing nuclear and radiological materials both domestically and around the world;

- Minimizing and eliminating weapons-usable materials, including replacing nuclear and radiological materials with viable alternatives wherever feasible;
- Controlling the further spread of proliferation-sensitive materials, technology, and expertise; and
- Advancing monitoring and verification techniques that will help achieve future nuclear nonproliferation and arms control objectives.

NNSA has made significant progress in replacing Highly Enriched Uranium with Low Enriched Uranium for civilian applications, increasing the preparedness to respond and lower the impact of a nuclear incident, and providing increasingly capable space-based sensors to monitor nuclear activities. However, like so much at NNSA, the defense nuclear nonproliferation mission is evolving. Emerging technologies such as additive manufacturing, unmanned aerial systems, advanced nuclear reactors, high-powered computing, and artificial intelligence provide opportunities to enhance the nuclear threat reduction mission by harnessing their capabilities to detect nuclear proliferation and aid other missions. Yet these same technologies also introduce new risks, lowering the barrier to proliferation and making it easier for state and non-state actors to pursue nuclear or radiological devices.

Complementing the work of DNN is the Nuclear Counterterrorism and Incident Response (NCTIR) Program, which includes the Emergency Operations and Counterterrorism and Counterproliferation subprograms. NCTIR provides capabilities to counter and respond to nuclear incidents and accidents worldwide. The FY 2023 request for NCTIR is \$423.97 million, \$46.46 million above the FY 2021 enacted level. The CTCP subprogram sustains the United States' nuclear counterterrorism and counterproliferation activities, enhances nuclear forensic capabilities to attribute the origin of nuclear devices and materials found outside of regulatory control and maintains the Nuclear Emergency Support Team's (NEST) critical nuclear incident and accident response and technical reach back capabilities. The capabilities in this program have been critical to timely assessment and sensor enhancement in Ukraine.

Naval Reactors

The Office of Naval Reactors remains at the forefront of technological developments in naval nuclear propulsion. The FY 2023 Budget Request provides \$2.1 billion for Naval Reactors (NR) to continue NR's core objective of supporting the daily safe and reliable operation of the Nation's nuclear fleet. The request supports NR's responsibilities to refine and improve existing technology to ensure that the U.S. Navy's nuclear propulsion plants are increasingly efficient and effective and will be capable of meeting future threats to national security. NR supports the existing nuclear fleet and three major DOE initiatives—the Columbia-Class Reactor System Development, the Land-based S8G Prototype Refueling Overhaul, and the Spent Fuel Handling Recapitalization Project.

NNSA Workforce

To manage this broad portfolio, NNSA depends upon recruiting, training, and retaining a highly technical Federal and M&O workforce. The NNSA federal workforce consists of a diverse team of scientists, engineers, project and program managers, foreign affairs specialists, and support staff that perform program and project management and appropriate oversight of the national security missions related to Weapons Activities and Defense Nuclear Nonproliferation. The FY 2023 budget request for Federal Salaries and Expenses (FSE) is \$496.4 million, an increase of \$32 million, or 7 percent, above the FY 2022 enacted level.

Conclusion

In conclusion, I reaffirm my commitment to lead the Department of Energy. I look forward to our continued partnership to achieve these ambitious yet necessary goals.

Thank you for the opportunity to be here today. I am happy to answer your questions.

Ms. KAPTUR. Thank you very much, Secretary Granholm, for your statement. Let me remind all members and witnesses that the 5-minute clock still applies. And if there is a technology issue, we will move on to the next member until the issue is resolved and you will retain the balance of your time. You will notice a clock that will show how much time is remaining. When your time is expired, I will begin to recognize the next member.

In terms of speaking order, we will follow the order as we did in yesterday's hearing beginning with the chair and ranking member, then members present at the time the hearing is called to order recognized in order of seniority, and, finally, members arriving after gavel by order of arrival. Additional rounds of questions may occur after all members have an opportunity for a first round. We will now begin questioning under our normal rules.

Madam Secretary, I am very happy that you referenced the bipartisan infrastructure legislation and the Energy Title and the \$62 billion in the Energy Title. I just have a comment there. You don't have to react, but I think in many communities, when they think about the infrastructure bill, they think about bridges and they think about roads. I would venture to say there are a whole lot of leaders in our country at the local level who don't even know that energy is a part of that bill. I don't know what structure you have at the Department of Energy, but I would urge you to consider a team of people who could speak on Zoom, for example, with the local communities that aren't as connected to the Federal Government. They don't have labs. They don't have big bases. They don't have officials who have ever dealt with the Department of Energy in any major way, and yet they would benefit enormously by being able to modernize their energy platform and take advantage of some of the provisions that exist in the bill. So, I just wanted to put that on the table of what I consider unfinished work for the country. And if the Department could meet the street more effectively, I really do think it would be a very important set of discussions to have.

The question I wanted to deal with first is hydrogen. Now, we know how important hydrogen is to our future and it can be made from a diverse set of sources, domestic resources, and used in a way to decarbonize sectors. So, this gives hydrogen the enormous potential to increase our energy security, save consumers money, and reduce carbon pollution. I was a couple minutes late even getting here because one of the members of Congress asked me if I couldn't set up a special briefing just on hydrogen.

In our region, the Great Lakes, we have the ability to produce hydrogen off nuclear and solar, and have strong regional demand for low-carbon hydrogen with all of our manufacturing, obviously. I have met with so many of our automotive companies and when I say, what can I do to keep your production here, their first answer is cut our energy costs by a third. So, America has to move in that direction.

So, my question really is how is the Department approaching this potential for the expansion of the hydrogen economy and how can that be supported on a regional basis? And I have an open invitation to you anytime, maybe you are driving back to Michigan, to come to the Upper Great Lakes to visit our region where we are

trying to be relevant in this space, but, frankly, don't have a lot of experience among some sectors of our economy and even knowing how to embrace it.

Secretary GRANHOLM. Thank you. I don't think there is a lot of areas of the country, there may be a couple, who have experience with hydrogen. But this is a whole new opportunity for all of your communities.

These hydrogen hubs, thank you for those of you who supported the Bipartisan Infrastructure Law, it is going to provide \$8 billion to create a series of hydrogen hubs across the country. Those could be—and we want them to be centers of hydrogen economies, local hydrogen economies around the country. We see it as a huge economic opportunity in addition to an energy and climate solution. Every country that I have met with, you know, where my counterpart—everybody is looking for this solution, because it is clean, dispatchable, baseload power.

And so whether it is nuclear or natural gas, coupled perhaps with carbon capture, whether it is renewable energy, there is just—there is so much potential for communities to be able to benefit from this. So, we have issued several—we have issued two requests for information, and we are now sifting through about 5,000 pages that we have received from local communities across the country who want to form collaborations to be able to create a hydrogen hub. And that might be a collaboration between states, it might be collaboration between regions. It might be an industrial decarbonization hydrogen play where you have got a business collection that are interested in decarbonizing using hydrogen.

So, it is a very exciting opportunity. We will be issuing a funding opportunity announcement once we have finished sifting through all of the feedback that we have received. And we hope to have, over a couple of years, a series of announcements regarding hydrogen from that Bipartisan Infrastructure Law. Hopefully, I mean, I know it is four that are required, but I think that there could be many more. It will require a match from industry. And so getting that partnership is a lot of what local communities are working on now. And there may be anchor businesses that are most likely to be able to partner on it.

Ms. KAPTUR. All right. I wanted to say this for the record and I don't want to bore my colleagues, but this is my moment, so I am going to take it. I probably represent one of the heaviest industrial platforms in the country that spans the southern rim of Lake Erie. It includes the major Stellantis Jeep platform, the largest on the continent, making the most popular vehicle, the Wrangler, and other products as well. We have major automotive companies, General Motors. We have steel companies like Cleveland-Cliffs, now a \$20 billion company that bought ArcelorMittal. We have the largest heavy truck facility at Avon Lake, Ford. And just south of my district we have the Lima Tank Plant, which makes the M1A2 and other equipment for the U.S. military.

We are a very heavy industrial user. We have the birth of—the rebirth of the greenhouse industry in our area where Canadian companies are moving south, Mucci, Nature Fresh, 200-acre greenhouses to displace where fruits and vegetables are not being grown because of a lack of water. Forty percent of their bottom line is en-

ergy. I keep looking at my region and thinking, what do I do on energy? What do I do in order to make these companies more competitive? And I believe people should work for a living wage, and they work hard in each of these industries.

So, I don't know what the Department of Energy can do to look at different areas of the country that have special needs. But having come from Michigan, you know the power requirements of these places. And I am hoping you might consider identifying some of these heavy industrial regions looking at the infrastructure bill and the Department of Energy bill and thinking about a new energy future that is attended to these places.

New circuitry, where do we put it? How do we interlink the movement of power across these regions under the kind of international competition that they face? So, I just put that on the table. I don't know if the DOE has the capacity to do that, but I can definitely tell you it is needed in regions like my own.

Yes, I am going to go to the ranking member, Mr. Simpson, now.

Mr. SIMPSON. Thank you. Again, thank you for being here today. I know you have only been with the Federal Government now for, what, a year and 4 months or something like that. I have come to understand, as I am sure Chairwoman Kaptur and Congressman Calvert, who have been here for a number of years, how things work. So, I am going to give you this hint. In the House, we do our job. We actually pass appropriation bills. We work together with the minority and majority and get a bill passed and then we wait and wait and wait for the body across the Rotunda to do anything. I don't care what. Just do anything. And consequently, that leads us to doing omnibuses halfway through the fiscal year, which is no way to run a railroad and especially no way to run the Federal Government.

And one of my goals in life is to live long enough to actually see Congress finish their appropriation bills on time because I am, like, 85 percent sure of when October 1st comes. I know it is going to be between, like, September 30th and October 2nd. And you would think we would be able to do our bills on time, but, for some reason, we haven't done that since 1994, I think was the last year. That has got to change.

But I want to tell you that in this committee and the Appropriations Committee and the House in general, I think we work together in a good bipartisan fashion trying to get these bills done, taking into consideration each other's goals. But one of the keys, as I mentioned in my opening statement, for us to be able to do our job is to get the information we need. You are not the first Secretary that I have told this to. I have told it to every single Secretary that we have had before us, is that our key to getting our job done is to make sure that we get the budget justifications and other information that we ask for.

It is not so that we can criticize you or anything else. It is so that we have that information so that we can make solid decisions when we are putting together the budget. So, anything that you can do to make sure that that happens would certainly be appreciated by this committee.

Secretary GRANHOLM. Yes, I completely understand. I know you—

Mr. SIMPSON. Having been a governor, you understand this entirely.

Secretary GRANHOLM. Yes, I do. I completely understand.

Mr. SIMPSON. Yeah. Previously, the Department of Energy has warned that the U.S. energy sector faces eminent danger from cyber attacks and those attacks are growing more frequent and sophisticated. Electric utilities and energy companies have started sharing information with each other and with the government. The DOE has led the way in this area, but the industry is large and diverse.

How vulnerable is the U.S. energy sector and can technology reduce the inherent vulnerabilities of the U.S. energy sector? How does the budget request address those vulnerabilities? And has the DOE estimated the potential impact, the economic impact, of a successful widespread attack on the U.S. energy sector?

Secretary GRANHOLM. Okay. So, yes, we completely agree that this is an important area to focus on. CESER, of course, which is the agency responsible for it, there is a bit of an increase for them, but they have really been focused on this shields-up posture in light of the fact that we are on a war footing with Russia and, of course, China also has been a concern. So, CESER has a very strong relationship with utilities and with the private sector to ensure that we have a two-way conversation, but it is super tight. And that means that many in the utilities sector have agreed to put our technology on their system so that we can listen and follow when there is an attack or when there is any irregularity, and then we can share it with the rest of the system because, obviously, what happens to one could happen to the other. It is very instantaneous. We feel very good about it.

CESER has been excellent in putting out grants for designing smart grids for designing for the future. The technologies associated with the grid should create a grid that is very responsive to other parts of the country so that you can move electrons around where they are needed.

Technology is continuing to advance. It is one of the reasons why part of the increase for the Energy Efficiency and Renewable Energy part of our office is on their grid initiative to do the research necessary for the next generation of technologies to ensure that the grid is resilient, resilient from extreme weather events, but also resilient from cyber. And so those pieces of technology, and they work very closely together, both CESER and EERE, to make sure that the grid is resilient, especially because we are looking to expand the grid because we have got a lot more capacity that we have to add.

Mr. SIMPSON. Thank you for that and I appreciate that. As you know from our conversations in the past and from this, that I am very interested in cybersecurity.

Secretary GRANHOLM. Yep.

Mr. SIMPSON. And while we all are concerned and worried about a nuclear attack and stuff like that, the reality is we would know where that came from and there would be an immediate response. The problem is with cybersecurity, we have no idea where that attack is going to come from and it can happen and cause huge impacts to our economy and so forth.

So, I think this is really an area in the future that, I think, Government-wide, we need to take more seriously and invest more money in trying to prevent those types of attacks.

Secretary GRANHOLM. I agree with you.

Mr. SIMPSON. So, appreciate it. Yield back.

Ms. KAPTUR. Thank you, Mr. Simpson. Congresswoman Debbie Wasserman Schultz.

Ms. WASSERMAN SCHULTZ. Thank you, Madam Chair. Madam Secretary, it is good to see you. I hail from the Sunshine State, as you know, so you will not be surprised at the theme of my question, which is around solar energy.

Solar energy is incredibly important to my state and it was really disturbing, I am sure you shared the concern, that our state legislature this past session passed a bill that would actually disincentivize or would have disincentivized residential solar installation by substantially cutting back on net metering. And thankfully, Governor DeSantis, and I don't use those few words in a sentence very often, but thankfully Governor DeSantis, who was pressured heavily into vetoing the bill, did so yesterday, and thanks to the tireless advocacy of progressive groups.

But independent analysts are currently projecting that the rate of residential rooftop solar installations will fall for the first time ever. So, and that is not just in Florida. It is across the whole country and that obviously jeopardizes our efforts to reduce greenhouse gas emissions.

So, my question is, is would you support having DOE examine the reasons, causes, and what Congress can do to help improve installation rates?

Secretary GRANHOLM. Absolutely.

Ms. WASSERMAN SCHULTZ. Yeah.

Secretary GRANHOLM. Absolutely.

Ms. WASSERMAN SCHULTZ. I mean, it sounds like you might not have known that solar has actually——

Secretary GRANHOLM. I am wondering if that was as a result of the administrative action that has happening at Commerce. Is that why? Are you familiar with that?

Ms. WASSERMAN SCHULTZ. No.

Secretary GRANHOLM. There is an administration action which one or two solar manufacturers in the United States brought, which essentially has put on hold the shipments of solar panels into the United States.

Ms. WASSERMAN SCHULTZ. Okay.

Secretary GRANHOLM. And that has been a source of great concern because of the expectations that it will significantly reduce the amount of solar. You know, the bottom line is——

Ms. WASSERMAN SCHULTZ. The installations have actually dropped.

Secretary GRANHOLM. Yeah.

Ms. WASSERMAN SCHULTZ. So, that might——

Secretary GRANHOLM. Oh, I see what you mean. They already have.

Ms. WASSERMAN SCHULTZ. They have already dropped. Right.

Secretary GRANHOLM. No, we need to increase. I mean a lot of this is state action. You are right about that to incentivize. Net metering is one important way to do it.

I will say, the other part of this is that we have got to manufacture the full supply chain in the United States. I mean, Chairwoman Kaptur is lucky to have a really important solar footprint in her state. We need to have that everywhere so people feel that what they are manufacturing and what they can put on the roof and how much money they can save because it is, in many places, the cheapest form of energy.

Ms. WASSERMAN SCHULTZ. Oh, absolutely. And speaking of that infrastructure need, I mean, our state punches far below our weight class in Florida when it comes to solar energy. It is really counterintuitive, but we have the capacity for so much more solar than we generate. And the infrastructure law appropriated a few activities for the Solar Energy Technologies Office. So, can you talk about what kind of work and the new initiatives that will be generated by that office in 2023?

Secretary GRANHOLM. Yeah. One of the big pieces of it is a solar manufacturing accelerator. Because part—

Ms. WASSERMAN SCHULTZ. Music to my ears.

Secretary GRANHOLM. Yes. I mean, part of it is that the manufacturing of solar right now, especially because we rely on silicon in many places and we get that silicon and those panels from China, we have got to be building out that full supply chain here.

Ms. WASSERMAN SCHULTZ. Absolutely.

Secretary GRANHOLM. And we have also got to be looking beyond silicon. What are the next generation technologies that we should—what will make them more efficient? What are the perovskites? What are the technologies, the IT components of solar that we should be enhancing and accelerating? What about the racking and tracking systems? How can we make those more efficient? How can we do it for—how can we imbed next generation technologies into building materials so that you can't even tell that you have solar panels on your roof when you buy your house?

So, those kinds of technologies are part of the increase that we have asked for the Solar Technologies Office and the Energy Efficiency and Renewable Energy Office.

Ms. WASSERMAN SCHULTZ. Thank you. And so hopefully, between that office and a potential to examine the causes of the declines in installation rates, then we can really ramp up and address—use solar in much more significant ways to address greenhouse gases.

And then just very quickly, can you talk about the EERE restructuring?

Secretary GRANHOLM. Yeah.

Ms. WASSERMAN SCHULTZ. I know that we, obviously, need to invest significantly in EERE and it is critical for the climate crisis fight. My district in South Florida, it is a right now thing, not a someday thing. So, just would love to hear what your—

Secretary GRANHOLM. Yeah, I mean, first of all, you know, the Department of Energy was set up initially to really focus on the labs, research, development, a bit of demonstration, but not much deployment. So, what the Bipartisan Infrastructure Law has enabled us to do is to really exercise the muscle of deployment, taking

these technologies that we have been doing research on for years and getting them out into the states and the cities.

And so, EERE has been a critical component of doing the research for clean energy technologies and they will continue to do that. There are components, though, of EERE that have moved over, like, for example, the Weatherization Assistance Program, to the deployment side, because that really is where DOE meets the street, as the chairwoman has said, is through weatherization.

And so, we want to make sure that the deployment side, the demonstration side, the outward-facing side have all of the offices in it that are relevant to that. And EERE is now going to double down and focus on the technology side, part of which I just talked about. They are focused on sustainable aviation fuels, for example, next generation biofuels, huge emphasis on the research associated with that, and the grand challenge that has been put out to the private sector to meet the goal of getting 100 percent sustainable aviation fuels by 2050.

They are focused on next generation wind. I mean, wind has been so underfunded over the years and now we are going to have this big offshore wind push, like Europe has, which is close to—I mean, it is not a hundred percent, but it gets close to baseload clean power if you do it right. But if we are going to have it along the Atlantic and parts of the Pacific as well, there is a lot of research and a lot of work that has to go on the, you know, on the R&D side to make sure that that works, including planning and technical assistance, and all of that.

So, EERE has been—you know, the reason why we have boosted it is to really help be complementary to what is happening on the deployment and demonstration side of things. So, now both wings of our aircraft are more evenly balanced.

Ms. WASSERMAN SCHULTZ. Thank you. I yield back the time I don't have. I am so sorry I went over.

Ms. KAPTUR. You always do very well. Very well. Oh, dear, dear, Ken Calvert. Okay. Congressman Calvert.

Mr. CALVERT. Thank you, Madam Chair. Secretary, welcome. Thank you for being here today. As you know, I also serve as the ranking member on Defense Appropriations. So, the Department's Stockpile, Stewardship, and Weapons Modernization Programs are important to me and also to our country.

Admiral Richard from STRATCOM testified before the Defense Subcommittee several weeks ago and sounded serious alarm bells about the state of our nuclear infrastructure. The Department of Defense is concerned that there remains several single points of failure that need to be resolved very quickly. For example, it has been clear that we will not get to 80 pits per year by 2030.

With all these challenges after billions in new funding from the Infrastructure Bill for your Department's nondefense programs, I am disappointed that you are requesting a mere 3.7 percent increase for NNSA compared to 17 percent in nondefense. I might point out the core inflation rate this year will probably be about 6.5 percent. That is a hefty cut when you account for inflation.

I am not sure how anyone could justify shortcoming our national security, especially now as dangerous regimes challenge the international order. I might point out the Russian military doctrine al-

lows for the use of tactical nuclear weapons, which they have developed and continue to develop. And the Chinese are continuing to develop more and more weapons and more and more weapons which they are not suppose to make, but they are anyway.

Now we know that some of these key modernization milestones are out of reach. Can you describe what contingency plan the Department has in place? In other words, Plan A doesn't seem to be deliverable. What is Plan B to achieve a modern and effective nuclear deterrent?

Secretary GRANHOLM. Thank you for that. Let me respond directly to the pit question that you have, which is very important. We know that the two sites are important. Los Alamos is on track to complete their 30 pits per year. As we know, we are working on redesigning this MOX facility at Oakridge and we want to make sure that it is done well and right. Part of the delay, I think, may have to do a bit with COVID, with design issues. But now, our highest priority is making sure the infrastructure exists and it exists in a way to be able to safely produce the 50 pits.

We don't know exactly when that will be, but they are pushing to get it as close to 2030 as possible. It is a priority.

Mr. CALVERT. That was my question. What is that timeline? It seems nobody seems to know.

Secretary GRANHOLM. Well, I know they are looking at it one more time to be able to come up with the next estimate. I don't have that in front of me right now because I think that process is ongoing. But they understand the urgency with which this must happen and they also understand we have got to do it in the right way so that we don't find ourselves in a position of having made a mistake.

Mr. CALVERT. Well, in your budget request it includes a 7 percent increase for staffing at NNSA. How many full time employees would this funding support and can you provide the subcommittee with a detailed breakdown of job functions of these new employees?

Secretary GRANHOLM. I will. I will provide that in writing.

Mr. CALVERT. And has the Department maximized the modernization work that could be undertaken simultaneously? If not, what more can be done and what resources will that require?

Secretary GRANHOLM. Yeah, I mean we have asked for the resources we think are important. Clearly, the NNSA has got two very important missions. One is to make sure that we are modernizing the weapons that are in our strategy, and the second is making sure that the infrastructure associated with the production or the modernization of those weapons are up to snuff. And so, both are critical. Both require staff of significant expertise. We have had some attrition in the NNSA staff. They have increased the salary rates of contractors to be able to maintain the workforce, which was well received earlier in February. But there is more work to be done there, for sure.

Mr. CALVERT. Well, you put out a video in January announcing the largest staff increase expansion in the Department's history. How many of those thousand or so employees will support NNSA's Nuclear Modernization Program?

Secretary GRANHOLM. Those employees are for the Bipartisan Infrastructure Law, so.

Mr. CALVERT. So, none.

Secretary GRANHOLM. Right.

Mr. CALVERT. Okay. Thank you. I yield back.

Ms. KAPTUR. Congressman Kilmer.

Mr. KILMER. Thank you, Madam Chair. And thank you, Secretary Granholm. It is great to see you again. As always, excited to invite you to the Pacific Northwest National Lab in Sequim, Washington. We would look forward to hosting you and that is one of the questions I want to start off with. I am proud to have the Department's only marine and coastal research lab in my district, in Sequim. They are important contributors to our local economy and community.

Unfortunately, a lot of the facilities at the lab are aging and in need of some new investments to fully realize the potential of oceans and coastal communities to support our decarbonized future. With the Department's only hybrid boat expected at the lab next year, thanks to support from the Water Power Technologies Office, the lab needs some basic investments in new dock and water site infrastructure to fully leverage that new capability and accelerate innovation in the blue economy.

So, I am glad to see the request would provide an increase from the Water Power Office. More is needed and I am certainly going to be pushing for that in this year's appropriations process. So, here is my question. If Congress provides some additional funding for this office, can we get your commitment to invest in the infrastructure we need, certainly at Sequim, but also elsewhere, to leverage oceans and waterways to realize our decarbonized future?

Secretary GRANHOLM. Absolutely. I am with you on the power of water, the potential of it and water power. So, we would love to work together on it.

Mr. KILMER. Super. And along those lines, beyond the Water Power Technologies Office, the Department is doing a lot of critically important work that cuts across offices to leverage the blue economy, whether it is marine energy technology, floating solar, marine carbon removal technologies and so much more.

There are huge opportunities for our oceans and waterways to contribute to a clean energy future. My colleague on this subcommittee, Dan Newhouse, and I introduced a bill HR 6680, the Blue Energy Innovation Act, to establish and fund some of these crosscutting efforts that look at the common challenges in aquatic environments. I am hoping that this bill will be enacted as part of the Bipartisan Innovation Act that Congress is currently debating. But also hope that we can get your commitment to work with us through the regular appropriations process to establish that kind of coordinated crosscutting effort as soon as possible.

And as we do so, we would love to hear your thoughts on additional areas where DOE can do more to leverage our oceans for the clean energy future. And, again, I think seeing the work on blue economy firsthand would be worthwhile. So, we would love to invite you to come see us.

Secretary GRANHOLM. Thank you so much, and I really look forward to coming there to Sequim and seeing it. And, yes, would love to work with you on this. I think that you may have been talking to some folks on our team.

There is one other element that I would just put out there from the water-energy nexus, which is that we have funded an initiative related to water and energy. A lot of it, you know, the technologies associated with making sure that we are capturing the power of water, but also, using things like the ocean to be able to provide a solution to drought, et cetera, through maybe desalinization—desalination. So, there are a lot of different potential technologies that would fall under that and I am super excited about using marine technology, in particular, the power of waves.

Mr. KILMER. We would love to work with your team in that regard. With the little bit of time I have left, I would be remiss not to mention some concerns from across the other side of my state, and my guess is Mr. Newhouse may raise this too, regarding the Hanford Nuclear Reservation cleanup. As you know, Hanford was part of the Manhattan Project and produced plutonium during World War II and the Cold War period. Today, over 50 square miles of groundwater are contaminated above Federal standards. Three hundred buildings are contaminated. There are over 10,000 stored waste containers and more at the site.

I am concerned that we need funding above the President's budget request to put us on the needed timeline for cleanup and remediation of the site, especially as we enter the next phase of treating tank waste. I just wanted to raise that issue. I look forward to working with you and with this committee to ensure that there are adequate resources because we can't leave that region vulnerable to aging and failing infrastructure and got to make sure we are taking care of the families that live there and the farms, and the fish, and others that are counting on us here. So, I just wanted to raise that issue as well.

Secretary GRANHOLM. I agree with you 100 percent. And I look forward to meeting with you there in, hopefully, in the next few months.

Mr. KILMER. Thank you, Madam Chair. I see my time's nearly out and I yield back. And, again, thank you, Madam Secretary for being with us.

Ms. KAPTUR. Thank you. Congressman Fleischmann.

Mr. FLEISCHMANN. Thank you, Madam Chair, Ranking Member Simpson. Madam Secretary, thank you very much for being with us today. I so appreciate your kindness. Your visit, not only to Oak Ridge to see our great reservation where we have about \$7.2 billion worth of Federal investment in key DOE missions, but also for coming to the greatest midsized city in America right after that, Chattanooga. So, I feel very privileged and very spoiled. So, thank you for your kind visits and I look forward to working with you.

I have got several questions. As you know, I represent the 3rd District of Tennessee. I stay immersed in this portfolio. So, I am going to begin with a key question on the issue of reprocessing. And some people call it recycling, others reprocessing. America's got the world's largest inventory of used nuclear fuel load. Apparently, 86,000 metric tons scattered at some 75 sites in 35 states. And this used nuclear fuel represents a valid security threat from sabotage to a lot of other things. It is a very high cost to guard.

And earlier this year, I applaud the Department. The Department reached out for help, said, request for assistance, come up

with ideas. And we are getting ideas from industry, from some of the affected states. This is really not a partisan issue. It is a very serious issue that we are dealing with. And I deal with this with the Nuclear Cleanup Caucus.

My question is, in light of the Yucca status from the previous administration and this administration, which has been consistent in that regard, my question is, do you have an opinion on leveraging nuclear recycling or reprocessing to close the fuel cycle? And what is your thoughts about reprocessing, Ma'am?

Secretary GRANHOLM. Yeah, I think, you know, we are the solutions department, right? We are open to all manner of solutions. There are other places that do reprocess that. And we can learn from them. I know that there is research going on in our nuclear energy lab and in some spaces within the Department. I do think that if we can, recycle, if you will, in a safe way, and in a cost-effective way, then it makes certainly sense to do so. And I rely upon the scientists to tell us how we can get there.

I also think that we have got an awful lot of nuclear waste, and we have to dispose of it. You mentioned Yucca. We have to dispose of it in a responsible way or dispose of it—store it in a responsible way. And, of course, that is our blue-ribbon commission and the nuclear siting—consent based nuclear siting process that the Department of Energy and the Nuclear Energy Office is undertaking.

Mr. FLEISCHMANN. Great. And just one follow-up point. It does get called waste. I think that might be a little bit of a misnomer. These are really just used fuel that could be recycled and used again. And I just—that is just part of the semantics of this issue.

Moving forward, manufacturing housing is near and dear to me. Over the years, this is something that I have seen, especially with the cost of existing conventional site-based housing, manufacturing housing gives families an opportunity to get in at an entry level. I think it is great. Section 413, Madam Secretary, the Energy Independence and Security Act, requires the Department to develop energy efficiency standards. The statute says that DOE should use the code, except if it is not cost-effective comparing the energy savings to increased costs to the homeowner.

DOE's cost benefit analysis right now is, at best, incomplete in that it did not include, Madam Secretary, testing, compliance, and enforcement. So, I am going to ask you to please look at this. This is an issue that is not necessarily front and center, but it affects so many poorer Americans in terms of being able to get into these homes. So, I am going to defer to you to look at that and perhaps work with us to resolve some of those issues.

I know my time is waning. So, I have got a couple of other questions. The Office of Science is truly incredible. As you know, it funds our national labs. It is the largest funder of physical sciences that are essential to the discovery of energy transitions. It is just truly amazing. We have had record funding there.

But it has been brought to my attention by our national labs, particularly our friends in Oak Ridge, that the construction and operation facilities have not kept up with that funding. So, the best ideas in the world are getting funding and promoted at our national labs, but there is a lag in the construction and operations

funding to go with that. I wanted to please bring that to your attention and just ask that would work with us on that.

Secretary GRANHOLM. Absolutely.

Mr. FLEISCHMANN. And then, finally, an issue that I think kudos go to not only TDEC in our state, but also to Ike White and Deputy Secretary Turk working with me, as other administrations have, for the disposal cell at Oak Ridge. We are taking down legacy buildings. At the lab alone, there is over 75. The current cell will be filled up by probably 2027, maybe 2028. We need to get that built.

I have spoken with the EPA. I believe they are acting in earnest. They have showed that. Again, your department has worked well with us. We are all working together. And I would just ask your assistance to continue to work with EPA that we can get a decision so that we can get that cell built. If we don't get the cell built, we can't do legacy cleanup.

Secretary GRANHOLM. Right. I think you are probably aware that they had some very positive movement on potentially getting an agreement on that. I think Ike White may have shared that with you. And so, we are very hopeful and look forward to working with you on it too.

Mr. FLEISCHMANN. Thank you.

Secretary GRANHOLM. Thank you.

Mr. FLEISCHMANN. And, Madam Secretary, I yield back.

Ms. KAPTUR. Thank you very much, Mr. Fleischman. Congresswoman Bonnie Watson Coleman.

Mrs. WATSON COLEMAN. Thank you, Madam Chair. And thank you, Secretary. I appreciate your presentation for us today.

I was really pleased with early in the month that the DOE released a new equity action plan focusing on investing in HBCU opportunities in clean energy. And I am hopeful that these initiatives will eliminate barriers to access in STEM education. However, diversity within our national laboratories and other research agencies is still lacking across 17 of the national laboratories. Of the 242 people in senior leadership positions, only 24 are from under-represented minorities.

I would like to know how this budget would support diversity and how you would envision this budget being supportive of increasing and encouraging diversity in these areas—

Secretary GRANHOLM. Yeah, I think—

Mrs. WATSON COLEMAN [continuing]. In recruiting, as well as hiring.

Secretary GRANHOLM. I am sorry. Thank you for that question. A really important question, especially since we have got to increase to be able to benefit from the wisdom of all communities, we have to increase STEM leadership in all communities and education in all communities so we have a pipeline that really looks like and represents America.

So, we are doing a number of things. First, is that we are, our own house is focused on making sure that the hiring that we are doing reflects the diverse country that we are. Second, the labs themselves and the sites are doing an amazing job of—this is, you know, they have taken on this charge. And so, for example, I was recently with Representative Clyburn in the Savannah River site.

And he had pulled together all of the HBCUs and MSIs to be able to say to them, look, the site is going to hire your people if you train them in the right way for those apprenticeships. They will be paid there. And now, there is a pipeline and a relationship, and MOUs with all of those entities. So, we brought that model to the labs. They are increasing their funding for STEM recruitment and STEM education to be able to have us all benefit from it.

So, both inside the Department for basic hiring since I have been there for the Climate Energy Corps that we are recruiting and for what the labs are doing, all very important.

Our environmental management team is putting in this budget a significant commitment toward communities that are environmental justice communities and making sure that they, too, are at the table and that we are really—we are doing right by them and listening. And this is going to be true with the grants that go out from the funding opportunity announcements from the Bipartisan Infrastructure Law is that we want to make sure that that—that we are addressing Justice 40. And that 40 percent of the benefits of this funding go to communities that have been at the back of the pack and that we are able to rectify some of the, you know, the inequities that have been embedded over time. So, we are all in on this.

Mrs. WATSON COLEMAN. Madam Secretary, that is music to my ears. Thank you for that. I am incredibly proud also that Princeton Plasma Physics Lab is located in my district. I know that there was a Fusion Summit at the White House today. I also know that the Deputy Secretary and Mr. Turk had a long talk with the representatives from the White House, were able to tour PPPL earlier. I am wondering, what are the next steps in the development of that vision as it relates to fusion? Will the administration support and prioritize the funding necessary to accelerate the development of fusion energy and how is that reflected in this 2023 budget request?

Secretary GRANHOLM. Yes. Thank you for that. Obviously, the Princeton Plasma Fusion Lab is one of the key entities that is doing this, the National Ignition facility at LB&L, and a number of labs are doing work, incredibly important work in fusion. The Office of Science has about \$723 million for fusion in this budget, including the investment at ITER, our international cooperation with a number of countries that is located in France.

We have a real push on this, both from the administration, as well as inside. We know that there is a decadal strategy with respect to the administration having brought together folks to be able to do that. Congressman——

Mrs. WATSON COLEMAN. Right.

Secretary GRANHOLM [continuing]. Fleischmann, thank you for participating in that, as well. So, you know, I know everybody says it is far out. It is far out. But if you keep saying that and you don't put enough to make it come closer, this could be—it certainly could be an answer to our, all of our desires to get clean——

Mrs. WATSON COLEMAN. Thank you.

Secretary GRANHOLM [continuing]. Baseload power.

Mrs. WATSON COLEMAN. Thank you. I have 11 seconds left.

Secretary GRANHOLM. I am sorry.

Mrs. WATSON COLEMAN. Thank you for that. I just want to say this. New Jersey with its shoreline is very interested in capitalizing on wind energy offshore. And we hope that you all can recognize that we are trying to be a leader in that area. We are a leader in that area. And there will be the appropriate resources and support to those efforts to make sure that we meet even our governor's ambitious goal of 7,500 megawatts by 2035. It is so important to all of us. And connecting that wind energy to our energy grid is what we need attention on. Thank you.

Secretary GRANHOLM. Absolutely. Thank you. I was in New Jersey yesterday on that very subject. So, yes, agree 100 percent.

Mrs. WATSON COLEMAN. Oh, sorry I missed you.

Secretary GRANHOLM. No, that is fine.

Mrs. WATSON COLEMAN. Thank you. I yield back.

Ms. KAPTUR. Thank you very much, Congresswoman Watson Coleman. Congressman Newhouse.

Mr. NEWHOUSE. Thank you very much, Madam Chair. Madam Secretary, great to see you.

Secretary GRANHOLM. Great to see you too.

Mr. NEWHOUSE. Thank you for being with us. And let me start off by saying thank you for meeting with the Western Caucus earlier this year, having a great conversation about many of the energy concerns of members of the Western Caucus and their constituents. And just really appreciate you coming, sitting down with us for lunch, and hearing our concerns. So, thank you for that.

A couple things. First, I wanted to start off with something called the Tri-Cities Clean Energy Innovation Hub. And when you come to my district, you will see that firsthand. But as you know, at DOE sites across the country, we really have an incredibly unique set of skilled workers, capable of supporting a wide variety of national priorities, including clean energy and technology and development and deployment. It is nowhere better illustrated than in the Tri-Cities in Washington State.

We certainly have a dedicated team of local businesses, governments, utilities, community organizations. They have all been working to continually grow the clean energy innovation as a hub in the Tri-Cities. And I think they have even, I believe, even briefed some of your senior staff members. So, I think there is really a tremendous opportunity here for collaboration between DOE and the Tri-Cities. And when you do come to Hanford—we are going to reschedule that, I hope—and meet with folks there and with the Pacific Northwest National Laboratory that you will also take some time to meet with these folks and hear about their great work and things they are doing to work on clean energy goals. That would be exiting.

But jumping to Hanford. And I want to complement Mr. Kilmer for reading word for word exactly what I wrote for him. It was awesome. But talking about the needs that we have cleaning up the Hanford site. And given those current needs that he mentioned and referencing, my question, and then I will get into some other things, before I ask for your responses. Just simple. Why would the administration propose cutting funds for Hanford for fiscal year 2023 by \$172 million? It seems that we should be doing—that

doing that, would only move us further away from the successful completion of that cleanup.

You know, last, I think it was last summer, last June, perhaps, my colleague Senator Murray shared with you some of her serious concerns with the lifecycle costs of the Hanford project and asked if you thought that there were opportunities to lower them. And your response was that you didn't have a silver bullet, and I appreciate that. But I have to say that I think there are some important innovative solutions that we do have to accomplish this goal.

So, three things. The first, utilizing the high-level waste reclassification, which I was encouraged to see your department affirm and utilize at other sites around the country. So, thank you very much for doing that. Secondly, continuing our deployment of the low-level waste offsite disposal or the testbed initiative. I am sure you are familiar with that. We must move forward with a second stage.

And, lastly, on a more general matter that the current regulatory regime governing the site's cleanup. We have got to continue encouraging a proactive engagement and a partnership between the DOE and my state, the State of Washington, to really make true progress for the cleanup. So, I am just curious about your thoughts with all of that.

Secretary GRANHOLM. Yeah, I mean, I look forward to coming, as well. And again, I apologize that that trip had to be cancelled because I think there is no substitute for being there in person to see the site and to meet with people and businesses, et cetera, who are moving the clean energy spaces.

Mr. NEWHOUSE. As long as no more wars breakout, we will get you there, right?

Secretary GRANHOLM. Yeah, yes, thank you. You know, the funding issue is just a tough one, right? Because the EM's budget is 7.6 billion, and 2-1/2 billion of that goes to Hanford. There is no doubt that there is greater needs than that and, really, I look forward to working with you on it. This is a question of balancing across budgets and across sites. You know, I know that you know Ike White, who is head of our EM office, who has done just a phenomenal job at all of these sites, and he is trying to balance it all as well. You know, there is—they have been able to achieve some milestones where they come in under budget and ahead of time. For example, the side tank cesium, you know, was—the tank-side cesium removal system was ahead of time.

Mr. NEWHOUSE. We call it TSCR just for short.

Secretary GRANHOLM. TSCR, TSCR. But, you know, we are excited about the start of DF Law, you know, so I want to see it in person, personally. And I would love to talk through with you other ways we could consider how we can be efficient, but, you know, low cost, but safe, and address the community's concerns. All of those balance. And we obviously want to partner with Washington. And we will continue, we must partner with Washington in terms of the definition of the waste and whether it is— you know, whether we use the definition of high-level waste that we have used in other places or not. That is obviously part of the discussions that we are having.

Mr. NEWHOUSE. Thank you. Thank you very much for that. And, Madam Chair, I know I am over time, but can I just make one

point here that the Secretary and I would I think—their report earlier this year on the lifecycle cost of Hanford came up with potentially a total cost of \$640 billion, with a completion date somewhere near 2078, and we get 2.5 approximately a year. In order to meet that, it would be \$11 billion a year, just to put that in perspective. So we need that silver bullet, some of those things we are talking about, we really do. So, thank you, Madam Chair.

Ms. KAPTUR. Thank you very much. I just wanted to state that because votes have been called, members should just be aware of that. What we are going to do is we are going to continue the hearing and one of our colleagues will come and take the gavel as I go vote, and then we will come back. So, I just wanted to make members aware.

Congresswoman Herrera Beutler.

Ms. HERRERA BEUTLER. Thank you, Madam Chair. And thank you, Madam Secretary, for being with us today.

I wanted to talk about gas prices, which I am sure you are acutely aware of. The average price of gas is \$4.68 a gallon in Washington State, and in Southwest Washington, which is my home, not everybody can afford to drive a Tesla, although I am sure it would be fun to get the chance. I actually have a small business in my district recently who they are now downsizing their business because they can't afford the cost of gas on top of labor, and on top of maintenance, et cetera. And prior to this administration, we had the ability to be energy independent, but I feel like a rush to rather than a rainbow of energy options. We chose the green energy options only, I mean, almost singularly. And my concern is it is not going to happen overnight. And as a result, it really has driven up prices across the board.

And, let us be clear, gas prices were climbing prior to Russia's invasion of Ukraine. That obviously doesn't help the situation. I wanted to know really what steps the administration is taking on this piece. Because as much as we know there are many, many things happening, the main things that people are asking me about are these prices because it really impacts whether they can do what they need to do for their families. And I know that is important to you.

I think a lot of us would agree that there is nothing—I am fully in support of the goals to get electric vehicles on the road and moving, but I am having a real challenge with, you know, on one hand, it is let us plug every car in; on the other hand, we don't even know what the capacity in Washington State—we don't even know what our need is. I know that we came within 500 megawatts of brown-outs last year. Yet, the direction of our state is we can't even tell you what our need is and where our need is at, yet we are talking about getting rid of low-generating energy production in favor of things that are good, but I don't think are there yet to generate for the load. And so I wanted to hear you speak about that a little bit.

Secretary GRANHOLM. Thanks for the question because it is clearly just hugely acute for everyone, but particularly for people of moderate means. I mean, it is a huge, a huge burden. The President is obsessed with this as well.

As you know, oil is traded on a global market, and that global market, unfortunately, has had now between 1-1/2 to 2 million gal-

lons of barrels per day pulled off of it because of the Russian invasion. And yes, the prices were rising because we were coming out of COVID and the demand was increasing and the supply was not keeping up with demand. This is all about supply and demand, always, right?

But right now, people think often that a governor, I say this because this was always a question I got when prices went up, why can't you lower gas prices? But the fact is, it is traded on a global market. People in Europe, people in Brazil, everybody is paying that same 100- to \$110 per barrel. And so what do we do about that? So what the President has done is increased the barrels from the strategic petroleum reserve while calling upon an increase.

So just with respect, it's not a one only. I mean, the President understands that this is an acute moment. We have to increase supply, and that means we have to increase supply at home. We now are the number one producer of oil, of oil and gas. We are the number one producer of natural gas. We are the number one exporter of natural gas. We are a net oil exporter. So all of that is happening right now. He is calling upon that increase. And so there is starting to be an increase in production, and the Energy Information Agency suggests that about a million barrels per day will come online additionally by the end of this year.

And that is why the strategic petroleum reserve was set up to meet a million barrels per day to the end of this year so we can stabilize. It doesn't bring down prices, though, and that is why the transition, ultimately—and you are right, it is a transition—it is not going to happen overnight. The transition is important.

Ms. HERRERA BEUTLER. And that piece is so incredibly important because if we get it wrong we completely seize up the economy. And my fear is we are going to get it wrong.

The President was in Washington State last week on Earth Day and his main focus wasn't natural gas, and he wasn't talking with to the state lawmakers or the governor about the need to make sure that we don't rip out, which essentially they are trying to ban, this important piece of energy. It was we are going to further restrict your ability to make our Federal forests safe from major beetle infestation and wildfire. It was we are going to take it even—you can pull out less trees. Right now we are not even taking enough trees off to keep the mortality in check.

So I feel like, though he understands that piece, it is not where the administration is moving. And I guess I would encourage you—and some of it, these are state-level decisions. You know, I hear you saying this about oil and natural gas, yet I can tell you Washington State is not singing that tune and our people are going to pay for it. So I guess maybe some of that cross-pollination of ideas would be incredibly helpful to the people that we all serve.

Secretary GRANHOLM. I appreciate you saying that. I will say, even though that was Earth Day, it might have been a slightly different message. The President has really called upon increased supply because he understands the importance of helping our allies at this moment.

You know, we at the DOE permitted two additional natural gas facilities yesterday. We have permitted every terminal request inside the United States that there is a permit for. We have per-

mitted 30 billion additional cubic feet of natural gas than what currently even is being built. So we are moving in that direction because we know that at the moment we have got to increase supply even as we transition to clean energy. We have to accelerate the transition to clean, but we also have to accelerate the supply right now.

Ms. HERRERA BEUTLER. Thank you for that, Madam Chair—Mr. Madam.

Secretary GRANHOLM. Sorry, that went on a long time.

Mr. KILMER. Please, just call me Derek.

Ms. HERRERA BEUTLER. There you are.

Mr. KILMER. Next up, Mr. Reschenthaler.

Mr. RESCHENTHALER. Thank you, Mr. Chair. And it is good to see you with a gavel, just like ModCon.

Madam Secretary, you were talking with my colleague just now about supply and demand and about how, of course, we are a large producer of hydrocarbons. I am still concerned, though, about pipelines. For example, there are some in the industry that say that we can only move roughly a quarter of the hydrocarbons we can actually produce. So given the fact that we have a shortage of pipelines, that the administration cancelled the Keystone XL Pipeline, you have New York—again, I understand this is a state issue—but preventing a pipeline from Pittsburgh to Boston which would prevent dirty Russian oil coming in to New England for fuel.

Despite that, it seems like the administration is against the expansion of pipelines. I know you said, and I quote you, “Pipe is the best way to go.” You were referring to hydrocarbons. Do you still have that opinion? And, also, how do you reconcile the difference between your opinion and that of the administration?

Secretary GRANHOLM. Well, I think here is what I know. We are going to need pipelines, for example, to sequester carbon if we do these demonstration projects for carbon capture and sequestration in the bipartisan energy bill, and it is an important aspect of decarbonizing the existing fossil fuel. So we have to have pipelines. We have to have pipelines for hydrogen. We have to make pipelines that we build perhaps hydrogen-ready even, you know. And there are ways to do that. This is what they are contemplating in Europe as well. So this is an important conversation.

I know that folks, you know, in the environmental movement understandably don’t want to build out infrastructure that ends up locking people into dirty fossils. And so the question is, how do you increase supply right now, make sure that we are able to be energy independent, make sure we are able to help our allies, and not permanently lock in an infrastructure which will be harmful, over the long run and in the immediate, to the planet?

And that is a technology question to me. That is something that we at the Department of Energy can be helpful and try to figure out. Obviously, pipelines are not permitted by the Department of Energy, but I do think that there are technology solutions that will lead us to be more moving in the direction of clean and be able to do supply right now.

Mr. RESCHENTHALER. I still think we artificially reduced our supply just by not bringing more pipelines in. I get what you are say-

ing, but I truly think that we would reduce energy costs if we had more pipelines.

Additionally, if we are looking at global CO₂ emissions and projecting power abroad, we would be in a much better position if we had more pipelines to get natural gas and other hydrocarbons to port so we can export LNG to our allies.

But I have a few more questions.

Secretary GRANHOLM. Okay.

Mr. RESCHENTHALER. So, Madam Secretary, last year you said to the oil and gas industry, and I quote you, "The bottom line is you have got to move. You cannot hang on and be like Kodak or the Blockbuster Videos of the energy world. You have got to diversify." The administration now this year is asking for the industry to stay the course, invest more. So has there been a shift in the administration? Have you shifted your position?

Secretary GRANHOLM. I think they have to do both. I mean, I think they recognize, the oil and gas industry recognizes that they have got to diversify. That is why many of the oil and gas majors are moving in the direction of calling themselves diversified energy companies rather than oil and gas, many of them.

And I was at Zero Week, which, of course, is the big week that oil and gas majors and other energy companies go to Houston. All of them that I talked to, except for maybe one, said that, yes, diversification of our business plan to move to clean is smart for us because we can see where this is heading. We know where, as we say in Michigan, we know where the puck is heading, and we have got to skate to that.

And so that is why you are seeing a huge amount of emphasis on, for example, building offshore wind platforms because they know how to build offshore oil and gas rigs. You are seeing emphasis on putting charging stations at gas stations and not resisting that. And emphasis on biofuels and emphasis on carbon management and emphasis on hydrogen. All of these strategies, to have them diversify and capture this movement, this transition to clean, which they very much see.

Mr. RESCHENTHALER. So I would still argue the pressure from the administration, again, artificially reduced supply because I think the positions the administration had early on froze a lot of investment in the industry. But you were talking about the transition to other sources. I think we need to be realistic about this. Let me just give you a statistic here.

Since the first insulation of an LNG export facility in 2016, the decarbonization impact to the U.S. LNG export industry has been greater than the impact of the U.S. solar industry over a 15-year period. I mean, you cannot refute that. So wouldn't we be better focusing on a transition to hydrocarbon and then to so-called clean industry rather than trying to make the jump? For example, if we are exporting LNG, if we are burning hydrocarbons here, we can actually reduce our CO₂ emissions and reduce the CO₂ emissions globally. We have proved that LNG and hydrocarbons actually are a greater impact to the environment than these wind farms and solar panels. Do you have any comment on that?

Secretary GRANHOLM. Well, I think we have to invest more in deployment of wind and solar because it is truly zero carbon-emitting,

and that is ultimately where we would like to be. I understand that liquified natural gas is better for the climate than coal, burning dirty coal or diesel, and that is why so much of that LNG has an impact. But ultimately, it would be terrific if we could button down the LNG world, making sure that they don't have methane leaks, making sure that their CO₂ is also captured and sequestered so that they are near zero carbon technologies. We are not quite there yet, but the Bipartisan Infrastructure Law helps to get us there.

Can I just say one word on this? You mentioned that the Biden policies had an impact on suppressing production in the oil and gas. I just want to point out, in March, the Dallas Fed did a survey of all of the oil and gas CEOs, and in that survey 94 percent of them said the reduction in production had nothing to do with government policy, it had everything to do with Wall Street. Wall Street was clamping down on the oil and gas industry because they didn't want to see investment in further production, capital investment. They wanted to take advantage of this increase in cost to be able to get customer buyback and they wanted to exercise what is known as fiscal discipline. So that was the biggest reason why you have seen a dip in production. It was not—94 percent said it was not because of government policy.

Mr. RESCHENTHALER. I am over time, but just a quick rebuttal. So, I think Wall Street, if you are talking about Wall Street, capital is going to go where capital is treated best. So when there is rhetoric saying that we want to eliminate fossil fuels, or your administration wants to eliminate fossil fuels, there is not going to be investment in hydrocarbon. So I would say you are partially right—

Secretary GRANHOLM. But it was happening long before the Biden administration.

Mr. RESCHENTHALER [continuing]. That it was Wall Street, but—

Secretary GRANHOLM. It was happening long before the Biden Administration, this pullback. We are asking them for increasing supply. That is what the Biden administration did.

Mr. RESCHENTHALER. But did. Right, sorry.

Secretary GRANHOLM. But they had pulled back long ago.

Mr. KILMER. We have got to move on.

Secretary GRANHOLM. Sorry.

Mr. KILMER. Congresswoman Lee.

Mrs. LEE. Thank you, and it is nice to see you, Secretary. And I was really happy to host you on your recent visit to Nevada and show you our leadership and grid modernization and cutting-edge technology and, of course, the Weatherization Assistance Program.

I know we have connected on this issue before, but I would be remiss if I didn't mention nuclear waste at Yucca Mountain. As you know, Yucca Mountain has been a failure in both policy and science for decades, and we have been greatly encouraged in Nevada that this administration has committed to consent-based siting. So I just wanted to ask you, can you provide an update on the status of DOE's request for information on consent-based siting?

Secretary GRANHOLM. Yes, we put out that request for information on the consent-based siting in December. We have gotten now over 200, I think the period is closed, we have gotten over 200 responses, I think about 225 responses, and we are evaluating those.

And we will be taking our next steps and our cues from what communities may have expressed interest or at least want to have a further conversation about it. So the process is ongoing and continues.

Mrs. LEE. Good, we are encouraged by that. As you know, Nevada is the leader in renewable energy generation, especially solar, and has committed to 50 percent standard by 2030 and a goal of net zero by 2050. But to achieve these goals in Nevada and across the U.S., we need to modernize transmissions so that the grid of the future can get this clean energy from the sources to where it needs to go, and I understand that DOE established a Grid Deployment Office. How exactly is that office supporting implementation of the investment and JOBS Act funds? And what more can we expect to come from this office in the coming months?

Secretary GRANHOLM. Yeah, thanks so much. I mean, the grid is just a huge machine across the country and very complicated and, in parts, very dilapidated. So we need to increase capacity of the grids, and the Grid Deployment Office is going to be working on the planning with local communities about doing that increased capacity.

We need to identify the best spots, where there are gaps, and we need to make sure we are using the next generation technology to make sure that parts of the country can talk to one another; and to encourage, for example, regional transmission organizations, like what Nevada needs, to have a western transmission grid that can deliver energy to places that need it from places that are generating it.

The smart technology, the security from cyber attacks, resilience, making sure that we are where it is important burying the wires or otherwise making them resilient from fire or from extreme weather events, and additional capacity are all under the purview of the Grid Deployment Office.

Mrs. LEE. Great, thank you. I am looking forward to continuing to work with you on that.

Speaking of severe weather events, Nevada faces record heat, and I am also very concerned about many of my constituents struggling with high energy bills.

And we had a chance to tour a weatherized house in my district earlier this month and that was a great demonstration of the energy and money savings that we can achieve through some of these programs. Under the infrastructure bill we included a \$3.5 billion investment in the Weatherization Assistance Program and the administration's budget request right now proposes a new initiative, the LIHEAP Advantage Pilot Program. What results can we expect from this pilot program and how will it complement the funds in the infrastructure bill?

Secretary GRANHOLM. Yeah. There are two pilot programs that are involved in weatherization. One is the LIHEAP one because we spend a lot of money as passthrough the states on paying for the high energy bills of people who can't afford it. But we do not do at the same time weatherization of their homes, so that you do not end up having to spend all of that money on weatherization. So, the LIHEAP Pilot addresses that and it is a partnership with HUD to make sure that happens.

The second is that many homeowners are turned away from the weatherization program because their home doesn't qualify because there may be a structural deficit. Maybe they have mold, maybe the roof is not structurally sound. So, we have a pre-weatherization component of the budget, a \$40 million slug for that, to make sure that these homes are ready to be weatherized. And these are often the homes that need it most.

There are almost 40 million homes across the country that are weatherization-eligible and, unfortunately, we only usually only do about 35,000 a year. So, have a huge amount to go. That 3-1/2 billion gave us the ability to do another 450,000 homes. That is great, but not just a drop in the bucket compared to the need out there. So, I hope this committee can support increases to the weatherization budget.

Mrs. LEE. Great. Yeah, no, this is an important program and one that is such—not just energy but cost saving for so many people. Thank you, and I yield the time I don't have.

Mr. KILMER. Mr. Ryan.

Mr. RYAN. Thank you. Thank you, Madam Secretary. We appreciate your leadership on all of these issues. Thank you. Two quick questions because we have to run and vote.

One is on the Build American, Buy American Act which we had included in the Bipartisan Infrastructure Bill. Senator Brown was very helpful in the Senate. We are going to conduct some pretty vigorous oversight on this because we have had Buy American over the years and it doesn't always end up the way we want it to. And agencies were supposed to comply by May 14th and I am a little concerned that the Department of Energy has already missed its statutory January 14th deadline. So—

Secretary GRANHOLM. I am going to look that up later.

Mr. RYAN. Okay. Okay.

Secretary GRANHOLM. So keep going.

Mr. RYAN. You can take that for the record, unless you have it.

Secretary GRANHOLM. Yeah, yeah, yeah, keep talking. I am—I want to see if I have it.

Mr. RYAN. Okay. Just wondering what steps you guys are going to take to identify the Federal Assistance Infrastructure Programs not currently applying Buy American.

Secretary GRANHOLM. Okay. So, first, I do have that information. We did miss the January 14th deadline, but we did transmit it to Congress in early March, and it is publicly available, and we are working to post it on the Federal Register. So, just to let you know.

Mr. RYAN. Okay.

Secretary GRANHOLM. Totally agree with your emphasis on Buy American. As you know—

Mr. RYAN. I know you do.

Secretary GRANHOLM [continuing]. The administration does as well, and we are so excited that the components ended up in the Bipartisan Infrastructure Law. It means so much for all of these programs, including the funding that we will be putting out in funding opportunity announcements for some of these demonstration projects, as well as what we are purchasing in the Federal Government for our own use, the FEMP, the Federal Energy Management Program that has been moved to the infrastructure col-

umn of our new reorg, is all about making sure that we are able to Buy American.

We have gaps, though, as you know. We have supply chain gaps and this is just the overarching. We have to fill those gaps with American businesses and American mining and American all of that, the gaps in the supply chain, so to build on what you have already put your footprint on. We have to build out the full supply chains for all of these, including solar, the Solar Energy Manufacturing Act that has been proposed, I hope. We support the manufacture of these energy technologies in addition to subsidizing the generation of the energy itself.

Mr. RYAN. Right. It is such a great opportunity for us.

Secretary GRANHOLM. Yup. Sure is.

Mr. RYAN. So, I know you know that in Michigan. We want that in Ohio. We don't have to be enemies all year long.

Secretary GRANHOLM. I know.

Mr. RYAN. Just, you know, just one afternoon in the fall.

Secretary GRANHOLM. We have that Midwest-Great Lakes thing.

Mr. RYAN. One other issue real quickly. Implementing policies to address climate change is vital, as you know. But this cannot be done by turning to solar cells that are made in China, which is a big concern that I have and China's coal-fired factories. And this is especially true as it relates to the solar panels used to power the Federal Government.

The primary method by which the Federal Government buys most of its solar power is through solar power purchase or similar agreements, meaning the panels belonging to the companies supplying the power do not have to meet any Buy American requirements, and this is a pretty big loophole. So, we wanted to bring it to your attention. I am going to be introducing a bill which does just that by expanding Buy American to mandate any solar panel used to generate electricity provided under a solar power purchase agreement must meet the Buy American standards. So, I would welcome your support and that of the Department and I would hope you would be open to working with us on that.

Secretary GRANHOLM. Absolutely open to working and that is another reason why we have to continue to build the solar supply chain here because China has such a big footprint on it.

Mr. RYAN. Yeah. I mean, we are trying to go green and we are using coal and all the, you know, heavy fossil fuel energy over there. So, thank you so much. Appreciate it. Always great seeing you.

Secretary GRANHOLM. Thank you so much, appreciate it.

Mr. KILMER. Mr. Simpson.

Mr. SIMPSON. Thank you. I will be very interested to see how this community based—consent-based thing turns out. You had 200 applications or at least inquiries.

Secretary GRANHOLM. Right. They responded a request for information.

Mr. SIMPSON. That is going to be—

Secretary GRANHOLM. And I am certain that some of them were objecting, so.

Mr. SIMPSON. Yeah. It is going to be fascinating to see how many of them are serious about it when they find out that the Federal

Government isn't working on a permanent geological repository and that they are likely to become the permanent repository and how much that is going to cost us.

You know, the City of Las Vegas came to me one time. This has been, I don't know, 12, 14 years ago. They were about ready to withdraw their objection to Yucca Mountain and support it. But when I asked them what they wanted, there was no way the Federal Government could afford it. We could put our whole budget into the City of Las Vegas. I mean, you can buy the support. It is going to be interesting to see how that turns out. I just want a solution.

Secretary GRANHOLM. Yeah, me, too.

Mr. SIMPSON. People think I am just pushing Yucca Mountain. I will tell you, as I have told every Secretary, don't fill up that \$14 billion hole in the ground because you are going to need a place to store all the studies that have been done by the National Academy of Science on that hole. It is the most studied piece of earth in the world. But anyway, that is neither here nor there. We just need to solve this problem.

In my opening statement I mentioned my overall dissatisfaction with the lack of priority given to the nuclear energy programs, and I am particularly disappointed that the budget request does not include funding for ongoing demonstration activities within the Advanced Small Modular Reactor Program. The NuScale SMR recently received its certification from the Nuclear Regulatory Commission, the first ever NRC-approved SMR design. There is a Western utility signed up to deliver this reactor. There has also been international interest in this SMR.

I intend to work, once again, to add funding to this, for this important demonstration project and I support the other demonstration projects that we are doing, also. Will you commit to working with us to ensure the continued progress and ultimate success of this project?

Secretary GRANHOLM. Yes.

Mr. SIMPSON. It is a very important project.

Secretary GRANHOLM. It is.

Mr. SIMPSON. One other thing I want to talk about for just a second. We have been talking about Buy American and et cetera, et cetera, et cetera, and this is kind of in your bailiwick, but not really. I mean, critical minerals and the permitting process, when we talk about Buy America and you have to have solar panels that meet that standard and so forth, the problem is critical minerals used to buy them—to build them are not in the United States. We buy them from China. We buy them from people that don't like us. And while you are not the permitting agency for the ability to go out and get these critical minerals, since they are on public lands and stuff, it is the Department of Interior, the Forest Service, or another agency, you are the end user of a lot of these critical minerals. Is there any type of interagency—

Secretary GRANHOLM. Yes, there is.

Mr. SIMPSON [continuing]. Group that is working to solve this, to streamline the permitting process? Because we can't be dependent—if there is anything we have learned from this pandemic, whether it is for PPE, for our medicines, whether it is our critical

minerals, whether it is our rare earths, we can't be dependent on people that don't like us to supply these.

Secretary GRANHOLM. Completely agree. Yeah, completely agree. Yes. You can do sustainable mining, you know, and it would make our minerals more attractive around the world, as well as for our own use.

Mr. SIMPSON. Yeah.

Secretary GRANHOLM. So, there are best practices out there. It is ridiculous how long it takes anything to get permitted. So, there is an intergovernmental group that is working on this right now, on speeding up the permitting. I mean, for mining is one because the President has called for us to make sure that we have a critical mineral strategy. In fact, today, he announced as part of the Ukraine supplemental \$500 million. That will go through the Department of Defense for critical minerals.

The Department of Defense was one of the entities that authored—led the authoring of the critical mineral supply chain. Of the 13 supply chain reports that were issued last year, critical minerals was one of them, and the Department of Defense issued that. We work with them closely.

So, yes we have got to make sure that we can get the minerals and get them quickly. So, permitting is one and making sure that the extraction process is sustainable is another.

I was just at Salton Sea in California. That is the largest geothermal brine of lithium, a huge opportunity, 600,000 tons potentially of lithium. And they are using geothermal to extract it in a responsible way. We have got to move on that, right. So, permitting is critical.

Let me just say, on the budget itself, our budget, we have really got to focus a crosscut on critical minerals. For example, the FECM, our Fossil Energy and Carbon Management Office, has been working to make sure that we can get critical minerals from coal waste, from acid mineage, et cetera, mine waste. The Bipartisan Infrastructure Law, we are going to be issuing next week a funding opportunity announcement in the battery space, but we don't have any place to process critical minerals and the processing is a problem. So, one of the pieces that the infrastructure law supported was to do a processing—to do money for processing.

Mr. SIMPSON. Right.

Secretary GRANHOLM. And that is going out next week. So, we believe this is a hugely important gap of supply chain and as a national security issue, and that we should be extracting our own, to the extent we haven't. You know, if you ask the National Geologic Survey, we don't have all of the minerals that we need. For example, we are a little shy on nickel and Russia supplies a lot of nickel. We don't want to get nickel from Russia, so what do we do? And that is part of the global strategy that we want to do is identify allies, allies that have the capabilities that we don't have that we can partner with to ensure that they are able to supply us, too.

Mr. SIMPSON. China has been very good at—

Secretary GRANHOLM. Yes.

Mr. SIMPSON [continuing]. Buying up those supplies in other countries, in Africa and other places.

Secretary GRANHOLM. Their Belt and Road Initiative, they make allies.

Mr. SIMPSON. Yeah, and, I mean, it is devastating. I will tell you, I mentioned this with the Secretary of Interior at the hearing this morning, the need to do this and the permitting process. They are obviously more directly involved in the permitting process, and so forth. But as we learned, we are about to learn the names of a lot of minerals that people don't know anything about.

Secretary GRANHOLM. Yes, yes.

Mr. SIMPSON. One of them is antimony. I didn't really—you know, I had a degree in chemistry, and I don't really know that much about antimony, but the Department of Defense says it is critical. If you are going to do anything with solar or you are going to do anything with nuclear, you going to do anything with batteries, antimony is a key thing.

We have got a mine in Idaho that was built during World War II for defense purposes, and it was just left. It is in disrepair. It actually pollutes the river just sitting there. We got a company that comes in that wants to clean it up and also can get golden antimony out of the tailings and stuff that were left there, and actually end up with a cleaner environment. And it has taken 7 years so far, and they still don't have a permit for it. We got a cobalt mine in Idaho that has taken 10 years to get permitted. We have got to change that and nobody wants to go in.

You know, when you say mining to most people, they still think of that picture of the firehose blowing away the side of the mountain in San Francisco or in Sacramento with the gold mine. It is not how we mine anymore, and nobody does it better than we do in the United States. So, we need to make sure that we can get this in place and still keep our laws in place that protect the environment stuff.

So, anyway I look forward to working with you and hearing what this intergovernmental agency committee is coming up with. Thank you.

Ms. KAPTUR. Thank you, Ranking Member Simpson, and I will say I share your concern about critical minerals and materials and how to maintain an edge there. Congresswoman Bustos.

Mrs. BUSTOS. Thank you, Madam Chair, and thank you to our ranking member as well. Thank you, Madam Secretary, and to your team. Appreciate your leadership.

I am going to go to my favorite topic and that is biofuels. I know every time that I have had a chance to interact with you that I bring up biofuels.

Secretary GRANHOLM. Yes, you do.

Mrs. BUSTOS. And you have been very good about talking about specifically the heavy-duty transportation, like aviation. So, you know, I see biofuels as this win-win-win. You have got climate, it helps the climate, it helps energy security, it helps our rural economy. The congressional district that I serve in Illinois is mostly rural, and so that is why I always bring this topic up when we are, you know, when we are talking energy.

So, last year, your Bioenergy Technologies Office announced new funding for biofuels and it was specifically for research, for heavy-duty transportation. And I was happy to see companies and re-

search institutions in Illinois, like ADM, who were getting in on the action. So, for fiscal year 2023, the Biden administration has requested increased funding for the Bioenergy Technologies Office in Department of Energy with an eye on scaling up new technologies that can help decarbonize all models of transportation.

So specifically, Secretary Granholm, can you please tell us a little bit more about why it is important that Congress provide additional funding for that part of your office and the role that Department of Energy sees biofuels playing, especially if you can drill down a little bit on ethanol and biodiesel and how that can help reduce transportation emissions?

Secretary GRANHOLM. Yeah, for sure. Thank you for saying that. I mean, there are some vehicles that it is just too difficult to electrify. I mean, we would like to move toward electrification, but it is just not realistic. I will just say that. That is, of course, the heavy-duty vehicles and that is, of course, aviation. That is why we are excited about the aviation—sustainable aviation fuels grand challenge. It is why we are putting in effect—you know, you were talking about the EERE funding and we are increasing, part of the increases is related to this, because we do think that biofuels are a key part of that future.

You know, the Biofuel Technology Office has focused on several components, and this is often in partnership with the Transportation Office, with our Vehicle Transportation Office, because they run on three pillars. They either want to electrify vehicles, they want to do electric fuel cells, or they want biofuels.

And so, the opportunity with biofuels for cleaning—for helping the planet, reducing CO₂ emissions. Certainly, in aviation that is a huge problem. We want to get to 100 percent sustainable aviation fuels by 2050 and the challenge that we have is to get 3 billion gallons by 2030, and then the full slug by 2050.

But we think this is also an economic opportunity. I mean, there will be the need for 400 additional refineries across the country to be able to meet that challenge. So, biofuels is definitely a part of the sustainable future. Our agricultural community is definitely a part of that future. They see it all the time. They see every day the impacts of climate from extreme weather events, whether it is droughts or floods or whatever, they know and they want to be part of the solution.

So, we are very excited about—I am excited to partner with you on this. I know it is a big deal for you in this and whatever the next role you have is, but I am excited to be able to make sure that we, you know, partner with our agricultural community in particular and meeting the needs.

Mrs. BUSTOS. So, I know you are working with Department of Transportation. The Department of Energy and U.S. Department of Agriculture, are there other ways you are working with USDA around biofuels or anything that you can talk about specifically?

Secretary GRANHOLM. Yeah. I mean, the partnership really has been very strong on the sustainable aviation fuel because that is together, we are doing that grand challenge.

You know, the Department of Agriculture is blessed with ability to have resources that some of the other areas of clean energy are a little bit starved for. So, working with the Department of Agri-

culture on, for example, sustainable forest and forest management and using forest waste as a way to blend into the biofuel economy is a really important part of our partnership as well.

Mrs. BUSTOS. I am really glad to hear you talk about the impact on economies and especially world economies. You come from Michigan, obviously I am Illinois, but you understand the importance of helping to build up the rural economy and you can play a very important role in that and you are at the Department of Energy.

Secretary GRANHOLM. I hope so, yes.

Mrs. BUSTOS. So, thank you very much. Great to see you and appreciate you answering my questions. I will yield back, Madam Chair.

Ms. KAPTUR. Thank you, Congresswoman Bustos. I have to put a story on the record. When Senator Tom Harkin was serving in the Senate on Appropriations, and I was on Agriculture in the House, we went to the Department of Agriculture before the word "biofuels industry" had even been born. And we had an amendment and we started it in Appropriations, not in authorizing. And the amendment was to go to USDA and say, look, you already do food, forestry, and fiber. We want to give you a fourth F, and we are going to call it fuel. They walked away. We had to force language on them through appropriation bills to get them to look at fuel. All right. Now you couldn't take it away from them.

But I just want to make sure the history is right. And I will put on the record here that sometimes even our genius departments can't find their way out of the woods.

And they need the American people to help them out. So, I will never forget, I couldn't believe it. I couldn't believe it. We had Republicans, Dick Lugar of Indiana, God bless him, he saw the future, John Glenn of Ohio. There were people who cared back then, but it was like, whoa, couldn't see it.

So, we flew, and I will put on record, the first Guard base in America to fly a biofuel plane came out of Toledo, Ohio, the 180th Fighter Wing.

Secretary GRANHOLM. Wow.

Ms. KAPTUR. And it was a smaller plane than an F-16 in those days. But anyway, it is just interesting to see, hey, and now America has made real progress. But what we don't know to this day is what is—if you plan an acre of a plant that can produce fuel for the different regions of the country, we still don't understand what is the maximum BTU outfit for the minimum of BTU input?

We are still not there, but we are going to get there. And with climate change, it is going to be even more complicated because the ecosystems are changing, but it is certainly possible. So, plant science is very important to us. But to get the Department of Agriculture to work with the Department of Energy, good luck.

Secretary GRANHOLM. We do.

Ms. KAPTUR. Good luck, good luck. That has—

Secretary GRANHOLM. We are doing it now.

Ms. KAPTUR. Good, good. That has been a major hurdle. So, I just thought I should put that on the record.

Mr. SIMPSON. Sounds like an I told you so whole story.

Ms. KAPTUR. Well, you know what, Mr. Ranking Member, I want to put it on the record just to make sure that all these geniuses that exist within the Beltway understand that there is genius out there—

Mr. SIMPSON. Yep.

Ms. KAPTUR [continuing]. That they best access. So, anyway, I wanted to call on Congressman Newhouse for questioning.

Mr. NEWHOUSE. I can only say good for you, Madam Chair. Well, thank you.

Madam Secretary, I want to talk about a subject that is already been broached, advanced nuclear reactors. And I am sure we both agree that they are a critical part of our energy future. In fact, the Department is investing a ton of money into the Advanced Reactor Demonstration Program.

And I can tell you, in central Washington, we are really excited about the project between X Energy, Energy Northwest, and Grant County PUD. So, another thing that we will show you when you come out, we will talk about.

But one challenge to the development is the commercial fuel supply. And you know what I am going to say about this. Right now, the only source of fuel that they require, it is called HALEU, which is an acronym. The only supplier commercially available for this fuel is from Russia.

Congress asked DOE to provide a plan for creating a domestic supply for HALEU. I am not sure, a number of years ago, but it has not been produced. And so a couple years ago, Congress appropriated \$75 million to be used for the establishment of a national uranium reserve. DOE has not yet secured that license that I know of, or for the permitting facilities or the storage capacity to start the reserve. So, couple questions.

First, DOE's Request for Information period closed in February. When can we expect the detailed plan, which would include specific milestones for completion and expected cost?

And second, beyond a DOE partnering with private industry to build out the infrastructure required to produce the HALEU, another potential source is down-blending highly enriched uranium into HALEU.

So, how are you facilitating conversations between the Office of Nuclear Energy and other government agencies, like NNSA and DOD, to determine if material available for down-blending and how it can be made available—

Secretary GRANHOLM. Yeah.

Mr. NEWHOUSE [continuing]. To the industry in a timely manner?

Secretary GRANHOLM. Great, great questions. First, let me say the issue of having a stockpile, a uranium stockpile, you'll see a request for—or, excuse me, a funding opportunity announcement at the beginning of June for that. So, we intend to put that out. That is with NNSA. NNSA and our Department of Nuclear Energy have been coordinating on a plan to make sure we get HALEU, but also LEU generally, because we need for our civilian fleet to be able to have all manner of low-enriched uranium.

So, you will be able—and we are happy to present that to you as soon as it has run the final traps, but it is in the very final

stages. I was just presented a presentation of it. And we understand the importance of making sure that we are energy secure and that includes uranium, and that includes making sure we have the ability for HALEU and LEU.

With respect to down-blending, I know that the NNSA is doing some of that. You know, it is better to go the LEU and HALEU strategy because down-blending is much more expensive and LEU is a much more high-value material. However, the strategy includes all of that. So, you will see that when they come out and I don't want to show—reveal too much at the moment, because I know they have got to finish running the traps on it.

Mr. NEWHOUSE. And then another issue, and just I only have a minute to go here, but I wanted to bring up the Columbia River Treaty. I know that, you know, you wear a lot of hats, but you have some relationship here, I believe. I think we are most impacted by this treaty. Ratepayers in my district are on the hook for a huge amount of money, I think millions of dollars, and not getting, we don't think, commensurate value back from that.

I would just like, if I could, have you update me on DOE's efforts to support successful modernization of that treaty and to secure an equitable entitlement. If there is conversations between you and State and if you could help encourage that process to move forward. Frankly, it is been frustrating the progress that we have seen on that, not just in this administration, frankly, but certainly we would like to see some movement there.

Secretary GRANHOLM. Yeah, we would, too. We know that it is required. The renegotiation or at least making sure we have the next iteration of it is really important. we don't feel like we got treated fairly in it, meaning the U.S. side. So, it is really important that we complete it.

I can bring you—I don't have the details of exactly what the status is of the negotiations, and I am happy to follow up with you just so that you know exactly where it is at.

Mr. NEWHOUSE. Well, we could certainly use your help and leadership on this. I think this has been ongoing for 10 years at \$50 million a year that are being spent by my constituents, and we need some help.

Secretary GRANHOLM. Okay. Let me follow up on that.

Mr. NEWHOUSE. Thank you. Thank you, Madam Chair.

Ms. KAPTUR. Thank you, Congressman Newhouse. Madam Secretary, we don't want to wear you out, but we are going to ask you a couple more questions here, if we could.

Secretary GRANHOLM. Okay.

Ms. KAPTUR. You use the term "deployment" on a new focus of the Department. I really like that, from pure science to actually getting it to the American people. And I wondered if you might just elaborate a little bit about your thinking about how DOE programs are helping to develop these local strategies to leverage Federal resources, to address their local issues and concerns and challenges. And as we move forward, how do the American people better relate to the Department of Energy? It sounds like you have got some new ideas.

Secretary GRANHOLM. How does DOE meet the streets is what you mean, right?

Ms. KAPTUR. Yes. Yes.

Secretary GRANHOLM. To use your words. We are doing several things. One is that we have created inside of that deployment bucket, that—it is under Secretary for Infrastructure, a state and community's energy plan, energy program. And in that, this is where DOE meets the street really, especially with respect to the technologies that we want to get out there. It is called SCEP in the budget.

In that office, we will include weatherization because that is obviously a really tangible place for that. It will include the Energy Futures Grants to state and local communities, local entities, who may not have the resources to do an energy plan for themselves and they want to.

Ms. KAPTUR. Yes.

Secretary GRANHOLM. They want to deploy clean energy. They want to create an ecosystem for employment in that space, and they may not have a relationship with a lab or know how to access the Federal bureaucracy. So, it is a way to give them technical assistance on how to do that.

And then sort of complementary to that there, we just launched a pilot called Communities Leap, and that is a local energy assistance program. And that is for communities that really are underserved to make sure that they too have it.

We just announced 22 communities that were designated this. And it means that the DOE is sort of adopting them to help walk them through the process, introduce them to a lab, help figure out. And they may have—the communities on the ground know best what their assets are. And we want to be able to say, all right, your assets are here and how can we help you get to enhance them to the next level?

So, for example, there is a community in Pittsburgh that wanted to use next generation technologies and weatherization to do a whole weatherization plan for a neighborhood. And so we wanted to connect them with the Weatherization Program, with our building technologies office to see what grants are out there in addition to what we were offering to help connect them to the whole of the government, not just DOE. So, all of that is our effort to be on the ground.

We have hired local specialists, which we have not done before as a department, to get out to make sure that we are connecting with both community organizations, as well as local officials. And we are continuing to enhance our effort to have DOE meet the street, as you say, including on the communication side. To your point, you said we should be having Zoom calls, et cetera. I mean, I am out all the time, but it is not just me. It is the entities within the Department. I mean, fortunately, actually Zoom makes it easier for us to connect more rapidly and efficiently with communities.

So, we have a whole deployment strategy to make sure that we are accessible and that the clean energy technologies that were built into the Bipartisan Infrastructure Law are available to communities across the country.

Ms. KAPTUR. I can't thank you enough for that original thinking. That has been something that this Department has needed forever. Based on the way that it was established, that wasn't the thinking

originally, but it has grown. And thank you for adding that dimension. And we will look at the websites and try to inform ourselves of what you are doing and share it with our membership.

Secretary GRANHOLM. Great.

Ms. KAPTUR. But thank you very much, very, very much. I want to turn quickly to an issue I just want to raise because maybe when you get to the cabinet level, your friends over at Labor Department and Education, it might be important to have a discussion. And that is about we talked earlier Congressman—our ranking member, Mr. Simpson, on critical minerals in the supply chain. I want to talk about the human supply chain relating to energy, particularly in the public realm. I am just starting in the public realm. Although these same needs I am going to discuss exist in the private realm as well.

It is very hard to find the word in the transportation bill “skilled tradesmen” or “skilled technician” or a “mechanic”. It is almost impossible. What you find are words like “workforce”. That is really interesting. But we know the following. We know right now the United States of America is probably a million mechanics short, technicians who will actually have to work on converting vehicles or building different kinds of vehicles or repairing these vehicles.

We have millions of vehicles, for instance, that are buses and police cars and fire engines and refuge trucks and dump trucks and ambulances and Postal vehicles and excavators. Various millions of these in the public sector. I am not even dealing with the private sector yet. And the conditions that many of the mechanics who work on these work in are terrible. They are terrible. And the less income a community has, the worse they are.

So, I am just informing, you probably know this, having been a governor, you got into all of the state vehicles and the—you know what goes on in these garages and so forth. But we are 1 million mechanics short in the country right now and technicians on the private side. And in the public sector, it is so confusing, you can’t even figure out how many you’re short. I defy anybody to tell me that number.

So, the need for someone to think about the connection between what the Department of Energy is trying to do with supply chains and the human supply chain, and connecting that to the Department of Labor and the Department of Education, I think is critical to bring up the next generation.

I was lucky to speak to the Secretary of Education on a number of topics and I brought this up and he laughed. He goes, guess what? When I was in school, they thought I would be a failure. So, they directed me to work and become a mechanic. I said, what? And I said, I found my first friend in Washington who actually cares about individuals who work in this field.

I think we need an initiative there, that is very important, and to attract and to work with private sector entities, not-for-profits, like the automotive—well, let us see if I can remember the name, Automotive Society of Engineers.

Secretary GRANHOLM. Society of Automotive Engineers.

Ms. KAPTUR. ASE.

Secretary GRANHOLM. SAE, I think.

Ms. KAPTUR. Or SAE, thank you, Society of Automotive Engineers and Technicians. I have no investment in them or anything. I am just saying that the mechanics that are extremely well trained and have to take national tests before they go work on some of these dangerous pieces of equipment have their seal. And many of our dealerships around the country post a sign if, in fact, their mechanics have this certification.

I think we can really do something tremendous for this country. Because many of the people that worked in past generations in these fields died of pulmonary illnesses and cancers and they still are because no one paid attention to them. And I just know that you have a chair of one little committee here in Congress along with a ranking member, who is trained in the field of dentistry and who understands something about mechanical sciences that deal with human health, that gets it. And I would really like to do something important for this group of people for our country.

And they are not even easily identified because there are some of them are unionized, some of them aren't unionized. A lot of them—a few of them came up in the military, but not enough. And the educational training is very Helter Skelter all over the country.

So, I just wanted to mention this. If we are a million mechanics short already, and we know what is happening in the vehicular sector right now, is that there are layoffs because if you make a conventional transmission, you are no longer as much needed as before because now, we have to make electric motors, but there's not an easy transition there, that we could create some kind of a retraining program and a training program for people who work in this very highly skilled area. And I will quote my brother to you now, who said to me, he was a highly skilled mechanic, he said, Marcy, he said, you keep working on preventing the people who are going to work on these new vehicles from being electrocuted. He said, that is one of your jobs when you go back to Washington. And because he knew what would happen to people having worked in the field for many, many years.

And so I went to the head of our firefighters recently in Toledo, my home. And I said to him the very same thing. And he goes, well, Marcy, we have been trained if we go to an accident and there is battery acid all over the road, he said, we have been trained to lift up the hood and cut the orange cord. I said, that is it? That is all the training you got? So, I'm just saying to you, that is street reality that I am bringing in here to Washington. And I just wanted to say that on behalf of all these wonderful people that work in this industry across our country and having represented major automotive companies, I know, you know what I am talking about.

Secretary GRANHOLM. I know exactly what you are talking about.

Ms. KAPTUR. I just wanted to put the supply chain of human beings into the discussion here today.

Secretary GRANHOLM. You will be happy to know that we just did an arrangement with AFL-CIO to do a training program for those who will be going into the battery space from the automotive industry to allow them. So, we are going to—we are developing an apprenticeship program with AFL CIO on the battery side. Just to let you know.

Ms. KAPTUR. I knew that you would be at the lead, whatever happened, but I just want to know, I want to lift it up.

Secretary GRANHOLM. I appreciate you so much.

Ms. KAPTUR. I just want to lift it up across the country. Mr. Ranking Member, do you have any additional questions?

Mr. SIMPSON. Just a couple. Don't mean to keep you any longer, but I was also told that I would be a failure by a lot of my teachers and I think they were right because I ended up in Congress. Who knows?

I don't think you are going to—I think if you talk about the treaty that Mr. Newhouse was talking about, I don't think we're going to get anywhere with then Canadians until we serve notice of termination. Because right now there is absolutely no incentive for the Canadians to get—I mean, they are getting a hell of a deal and there is no incentive there. So, we have been trying to push them to say, okay, let us serve notice of termination, so that they know that they have to get a deal with this somehow.

The other thing is, I am surprised we got through a hearing and nobody has really talked about, and I am surprised I didn't, we'll ask a question about it that we will submit for the record about down-blending and where we stand with the state of the down-blending of plutonium at South Carolina and WIPP, and where we stand with the State of New Mexico. If we have got the case resolved there of whether we can put this down-blended plutonium into WIPP or not, that has been a problem for a long time.

Secretary GRANHOLM. Yeah. The down-blended, I think, has been going to the Savannah—or, excuse me, to the Nevada National Security site. And—

Mr. SIMPSON. But ultimately, it is supposed to go into WIPP. I mean, that is where we want it to go.

Secretary GRANHOLM. Ultimately, it'll go into this eventual place—

Mr. SIMPSON. Yeah.

Secretary GRANHOLM [continuing]. That will take all of this.

Mr. SIMPSON. There is a question of whether we have to expand the land of WIPP and the capacity of WIPP—

Secretary GRANHOLM. Yes.

Mr. SIMPSON [continuing]. And, you know, what the volume actually is measured at, whether it is a 55-gallon drum or the 5 gallons that are actually in the drum.

Secretary GRANHOLM. Yeah.

Mr. SIMPSON. So—but anyway.

Secretary GRANHOLM. You are on it.

Mr. SIMPSON. I am surprised that nobody brought this up and I am surprised I didn't bring it up, and I just did, but it is something that we will ask in a question for some information and stuff like that.

Secretary GRANHOLM. Yeah. That would be great. And I am sure—

Mr. SIMPSON. One other thing that we haven't talked about is that when you put together this budget, I suspect it was, what, three or four months ago, five months ago.

Secretary GRANHOLM. Yes.

Mr. SIMPSON. Something like that.

Secretary GRANHOLM. Yes.

Mr. SIMPSON. As you know, there is an issue out there called inflation. Now, we could argue about what the cause was, but that doesn't get us anywhere. Are we going to have to see or are we going to see an adjustment in your budget request? Because you deal with an awful lot of projects, major construction, minor construction, and everything else. I suspect the price of those are going to be significantly increased because of inflation.

Secretary GRANHOLM. Well, it is certainly a concern. And certainly, you know, I mean, this is the 2023 budget, so, you know, some economists are suggesting that inflation is going to level off a bit, but it is just so hard to know because we don't know what is going to happen on the war side and on the supply side. So, it is something that we are really monitoring and we will have an ongoing conversation with you all about, obviously, if it is—you know, we don't want any program that is delivering a really critical program to the people to be cut, but we also understand that, you know, everybody has got to feel a pinch, too. So, we will be back with you on it.

Mr. SIMPSON. Okay. I appreciate that very much. And again, thank you for being here. I know it is been a long and tedious day for you—

Secretary GRANHOLM. It is all good.

Mr. SIMPSON [continuing]. And I appreciate your patience.

Secretary GRANHOLM. I appreciate your courtesy. Thank you so much.

Mr. SIMPSON. Thank you.

Secretary GRANHOLM. You have been great. Thank you.

Ms. KAPTUR. Thank you, Ranking Member Simpson, for your stalwart participation at every level and for the important acumen you bring to this. Thank you very, very much.

I have two final questions, Madam Secretary. I also serve on the Defense Appropriations Subcommittee and I wanted to echo the concern of our colleagues here on the NNSA weapons activities. And you well know the Department's responsibility for our Nation's nuclear deterrent and how important that is to our security and strategic interests, which grow every day. And it is a responsibility we all take seriously and I know you do, too.

DOD is in the midst of an ambitious nuclear modernization program you have referenced earlier, but that has severely strained the nuclear weapons complex. Previous NNSA administrators and even the current head of STRATCOM have said that NNSA can only absorb so much work at one time. I am concerned that NNSA is on an unsustainable path driven by DOD decision makers that do not fully understand these limits.

What guidance can you give me that I can—from DOE that I can share with DOD and do within the interagency process to rebalance risky nuclear modernization plans while meeting defense needs?

Secretary GRANHOLM. Yeah, this is a really important question because we understand that we have to all live within our means. However, you know, there is a point at—we all want to have a nuclear stockpile that is safe, secure, and effective, and that means you have to test and that means you have to have the facilities for

doing that And we want to have modernization happen in a way that is, again, using the most sophisticated of equipment, you know, the advanced computer technology, the modeling that is being done, all of this.

I was just at the Nevada National Security site. Anyway, without getting into that too much, I just want to say that I completely share the concern of making sure they are able to balance both of those missions and have it be funded in a way that ensures that the Department of Defense gets what they need in terms of the weapons, and delivered on time. I mean, part of this, you know, part of it is understanding that some of this is first-time efforts. You know, we haven't made pits in a long time, for example. So the 50 pits that are, you know, going to be delayed, this is—you know, we want to make sure we do it right and that we are not posing any risk both to the program or to any individuals.

So, I think the message is everybody has to understand that we are—that the NNSA is doing an amazing job with this mission and they need to be resourced to be able to do it. And we need to make sure that they—people understand this takes a little bit longer because it—because we have to be cautious.

Ms. KAPTUR. One of the issues that a former administrator of NNSA talked to us about was the talent shortage.

Secretary GRANHOLM. Oh, totally.

Ms. KAPTUR. And the retirements and so forth. And I think it is something that we need to—the one thing about Members of Congress, and especially the House, we can reach people. And if there are certain talents that are needed, the going gig in Washington is, well, everybody knows because there is the internet. Today I tried to draw down from the internet what the votes were when Congress first passed the Department of Energy back in 1977. To try to get through a website to find the answer, I had to rely on two of my younger staff. And I thought—and even they couldn't find it. I thought, well, that is interesting. If we can't figure out that, how are we going to find the people we need to talent our various labs and NNSA?

But one thing we can do is we can look—we can work with the Department, the Members who are interested, just like we do with our West Point appointees, just like we do with Annapolis and the Air Force Academy and the Coast Guard and all the other groups that we try to help. This area is so important. Again, I don't think we are meeting the street.

I was shocked to find out that the NNSA administrator told me, oh, I would say about 6 years ago, Congresswoman—no NNSA director has ever—administrator has ever set foot in Ohio. I was shocked. Because we don't have a lab. And so the idea that you would even know that such a place existed and that teachers would try to teach those who are in the sciences and so forth, and I thought we are not doing our job. There is something—again, meeting the street, searching for the talent that is needed. We need to do better.

And I know in Washington, it just sounds like if you put it on the internet, everybody will come to it. Wrong. Wrong. You understand that from having been governor.

I really think that we need a better approach to nurture that talent because these are critical positions. And I think one of the reasons things are slow is we have got a lot of retirees. We have got a generational change and I think that DOE and NNSA has got to think a little more creatively about how we get the American people to even know you exist.

Secretary GRANHOLM. Yeah.

Ms. KAPTUR. I am sorry, I don't want to hurt anybody's feelings, but it is a reality. Maybe all the talent exists in Idaho, I don't know, but.

Mr. SIMPSON. There is a lot there.

Ms. KAPTUR. Yeah. We know that by what they send here—by who they send here.

Mr. SIMPSON. Yeah.

Ms. KAPTUR. But really, I do think it is a challenge and maybe there is something more that we could help you do. So, that is one issue I wanted to put on the table.

And finally, in terms of Russia, Ukraine, and energy security, what steps has the Department taken or been invited to participate in to help consumers hurting from Putin's price hike on gasoline and other fossil fuel commodities? You have discussed that a little bit. And how are you communicating as the Department of Energy with communities inside the United States and abroad to develop strategies to reduce our reliance on fossil fuels and transition to clean energy? Is there a program underway or an initiative underway to help localities think about what they might do within their own sphere to begin to transform to the new energy age?

Secretary GRANHOLM. Yeah. I mean, a lot of that, as I was describing for you, comes from our state-community energy program. It is really getting communities to think about what their role is in this next generation, you know. And, of course, I have talked about what the President is doing right in the immediate in terms of trying to stabilize oil prices.

I neglected to mention also allowing for the introduction of 15 percent of an ethanol blend, so you reduce the amount—percentage of oil at the pump for many places, but not everyplace has ethanol blend pumps, biofuel pumps. So, you know, ultimately, the medium and long term will be to transition. But in the immediate it is all about how we can increase supply to reduce the price for people.

Ms. KAPTUR. Yes. Yes, I hear you on that. I know across my region there are millions of kilowatts of thermal energy that are wasted every year.

Secretary GRANHOLM. I see what you are saying.

Ms. KAPTUR. They go out into the lake.

Secretary GRANHOLM. Yeah.

Ms. KAPTUR. I know in our water plants, water purification and sewage treatment plants, we are wasting thermal energy. We have to change this.

Secretary GRANHOLM. Yeah.

Ms. KAPTUR. I appreciate your leadership on the weatherization program because about 40 percent of our conservation has to come in buildings. And if you haven't visited the D.C. water plant, I would encourage you to do that. Of all the places in the world that I would take you, I would pick the D.C. water plant.

Secretary GRANHOLM. Wow.

Ms. KAPTUR. Because of wastewater. In every city across our country, the biggest energy draw by the cities is for wastewater and water treatment. It is a big sop of money that affects all these communities. But when you see what they have done in their business plan, it is extraordinary.

You walk in, the first three words you see are, "Water is life." I thought, hmm, I feel comfortable here. And they have done their building in a way that they are drawing up thermal energy and the building materials they have used, which you have talked about, actually makes the building itself energy neutral.

And then they have a business plan to become a public utility that produces energy rather than just consumes it. It is fascinating to look at. And they use some thermal heat exchange to draw waste heat out of the sewer. And the building, it is on the Anacostia River here and weddings are performed in the building that treats sewage.

Mr. SIMPSON. That is where I would like to get married.

Ms. KAPTUR. Well, I will take you there myself.

Mr. SIMPSON. I am not sure I would want to see those pictures.

Ms. KAPTUR. You would be surprised. You would be—and I thought this—I have walked in—

Mr. SIMPSON. I would be and so would my wife.

Ms. KAPTUR. I figured I have walked into the 21st century. When you walk in that building, it is a different way of thinking about energy, about waste energy, about what America can do using technology. It was exciting. I didn't want to leave and all of our members felt the same way, the people. So, I just point that out.

And I think about the opportunities we have across our country to capture this new technology and spread it faster, so that we—I am amazed with some of the homes being built in your part of the country, and you probably know them better than I do, Congressman Simpson. But where the water is put on the south side of the building, so it gets the sun energy, and they are net-zero homes. I don't really represent net-zero homes yet in my area, but to see what is being done in Arizona and some of the Western States, wow.

In our area, the solar roof issue that you mentioned really fascinates me.

Secretary GRANHOLM. Mm-hmm.

Ms. KAPTUR. And how we are able to move our roofing companies into using the sun more wisely. You are heavily into that and I would push that envelope thoroughly because there is a lot there.

So, anyway, I just wanted to put a few of those comments on the record and thank my colleague, our ranking member, Mr. Simpson, for sticking it out here today. And I want to thank our staff, Scott, very much for his participation.

And I would like to draw to a close. And thank you very much for your perseverance, Madam Secretary. And thank you so very much. I ask the Secretary to please ensure for the hearing record that questions for the record and any supporting information requested by the subcommittee are delivered in final form to us no later than 3 weeks from the time that you receive them. And that members who have additional questions for the record will have

until the close of business on Tuesday, this coming Tuesday, to provide them to the subcommittee office.

And so, for the Nation, this hearing is adjourned and thank you so very much.

Secretary GRANHOLM. Thank you so very much. Thank you both. I appreciate it.

[Questions and answers submitted for the RECORD follow:]

QUESTIONS FOR THE RECORD
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT
U.S. HOUSE COMMITTEE ON APPROPRIATIONS

**Hearing: Fiscal Year 2023 Budget Request for the U.S. Department
of Energy
Thursday, April 28, 2021**

Chairwoman Kaptur

1. Weatherization

The weatherization program is one of DOE's most meaningful "meet the streets" efforts. The weatherization program delivers energy efficiency and cost savings to low-income Americans across our nation, and it is a lifeline for millions recovering from economic turmoil. To make the program work better, I have been fighting to bring the weatherization related federal agencies to the same table. On the ground, weatherization participants do not see the difference between LIHEAP, DOE, or HUD funding. I'm excited to work with you, and welcome your leadership, to develop better coordination among these programs.

There have been several recent developments related to this program, such as the recently authorized enhancement and innovation program, the new Weatherization Readiness Fund, the proposed LIHEAP Advantage Pilot, and pilot efforts at HUD focused on better coordination. How can the weatherization program be used to deliver a more equitable, just, and resilient reality for Americans struggling to heat and cool their homes?

Question: Madam Secretary, how do we effectively manage the weatherization program, from the local level up, to make sure these programs are ready and capable to save consumers money?

Answer: DOE is working with USDA, HHS, and HUD to assist local agencies to leverage different funding streams, including Low-Income Heating Assistance Program (LIHEAP) funds, certain HUD programs, and other non-federal sources, that will enable more low-income households to receive deeper and more comprehensive retrofits including newer clean energy technologies and best practices.

In order to ensure that the weatherization network understands how to utilize DOE WAP funding in conjunction with other federal and non-federal sources of funds, DOE recently issued a notice entitled, "Managing Multiple Funding Streams within the Weatherization Assistance

Program”^[1], DOE is working with our federal partners and Grantees and Subgrantees to develop webinars and training modules to braid funds on weatherization units that will result in greater and more comprehensive installation of energy conservation measures.

^[1] <https://www.energy.gov/eere/wap/articles/weatherization-program-notice-22-9-managing-multiple-funding-streams-within>

2. Place Based Strategies

Different regions have unique opportunities and challenges. Given your extensive knowledge of Michigan, you know all too well how our region in the manufacturing and automotive belt of the Great Lakes is unique. It has a robust automotive supply chain, numerous energy intensive manufacturers like steel and refining, and a diverse solar industry. The region also has expertise in specific R&D processes like advanced manufacturing and access to world class transportation and natural resources.

Communities across the country are responding to challenges relating to energy prices, climate change, and building a clean energy future.

Question: Secretary Granholm, can you elaborate about DOE programs that are helping to develop local strategies – so a place like Toledo Ohio with unique needs and capabilities – can leverage federal resources to address their local issues and counteract growing regional inequalities?

Answer: DOE has a number of programs that support local planning and assist communities in accessing DOE resources and technical assistance, including the following:

- Within the DOE office of Congressional and Intergovernmental Affairs, we have six Regional Intergovernmental and External Affairs Specialists who work closely with states and local communities to connect them with DOE tools and resources. Ohio is among the seven states covered by the Regional Specialist for the Midwest.
- The DOE Communities Leap (Local Energy Action Program) Pilot aims to facilitate sustained community-wide economic and environmental benefits primarily through DOE’s clean energy deployment work. This opportunity is specifically open to low-income, energy-burdened communities that are also experiencing either direct environmental justice impacts or direct economic impacts from a shift away from historic reliance on fossil fuels. In March 2022, DOE announced the selection of 24 communities to participate in this initial pilot, which provides supportive services valued at up to \$16 million for community-driven energy transitions.

- The Office of State and Community Energy Programs (SCEP) aims to significantly accelerate the deployment of clean energy technologies to reduce energy costs for households and businesses while catalyzing local economic development and creating high-quality jobs. Through funding from the Bipartisan Infrastructure law and annual appropriations, SCEP administers nearly \$6 Billion in grants for states, Tribal Nations, territories, local governments, school districts, and nonprofits. It expands existing core DOE programs, including the State Energy Program and the Weatherization Assistance Program, and incorporates newly funded programs such as the Energy Efficiency and Conservation Block Grant Program, the Local Government Energy Program, and the Energy Futures Grant Program to further state- and community-led efforts to advance clean energy.
- The State and Local Solution Center, developed and managed by the DOE Office of Renewable Energy and Energy Efficiency (EERE), provides a wealth of virtual tools and resources to states and local communities, including a comprehensive Energy Efficiency and Renewable Energy Resources for State and Local Leaders guide to DOE technical assistance programs for states and local governments.
- DOE's Advance Manufacturing Office (AMO) is teaming with the National Association of State Energy Officials (NASEO). Planned activities include: Creating a NASEO industrial/manufacturing Working Group; Assessing State Energy Office awareness, interests, and priorities related to industrial/manufacturing energy; Enhancing collaboration and exchange among SEOs, AMO, other assistance providers, and other stakeholders to advance technical and business assistance to manufacturers; Highlighting pertinent emerging industrial/manufacturing technologies; and engaging industry representatives and associations.

3. Hydrogen Fuels

Hydrogen can be made from diverse, domestic resources and used in hard to decarbonize sectors. That gives hydrogen the enormous potential to increase energy security, save consumers money, and reduce carbon pollution. This potential has created a lot of interest and collaborations. In our region of the Great Lakes, we have the ability to produce hydrogen from nuclear and solar and have strong regional demand for low-carbon hydrogen with all of our manufacturing assets.

Question: Secretary Granholm, what is the status of a hydrogen economy and how can the Department approach potential for expansion that can be supported on a regional basis?

Answer: DOE's Hydrogen Program is focused on research, development, and demonstration activities to enable low-cost and at-scale clean hydrogen to unlock opportunities across multiple sectors in the economy. Specifically, with respect to the regional clean hydrogen hubs, DOE is fostering the co-location of supply and demand on a regional basis to demonstrate hydrogen's value proposition. The hubs will help identify where there is clean hydrogen supply and end users close by, thus lowering infrastructure costs. Building these hubs on a large scale will also bring down costs by leveraging existing infrastructure that could be used for new hydrogen markets, such as trucks, energy storage, steel manufacturing, and existing pipelines.

4. NNSA Weapons Activities

Madam Secretary, the Department's responsibility for our nation's nuclear deterrent is critical to our national security and strategic interests. Current world events underscore our need for a credible, reliable nuclear deterrent. It is a responsibility that I take seriously, and I know you do as well.

DOE is in the midst of an ambitious nuclear modernization program that has severely strained the nuclear weapons complex. Previous NNSA Administrators, and even the current head of STRATCOM, have said that NNSA can only absorb so much work at one time. I am concerned that NNSA is on an unsustainable path, driven by DOD decision makers that do not fully understand these limits.

Question: Secretary Granholm, what can DOE do within the interagency to re-balance risky nuclear modernization plans while meeting defense needs?

Answer: The Nuclear Weapons Council's (NWC) role is to ensure NNSA and the Department of Defense (DoD) are aligned to deliver a credible and effective nuclear deterrent to the Nation. This alignment includes managing risks associated with schedules across both DoD platforms and NNSA weapons programs. The NWC continuously seeks opportunities across the nuclear deterrent portfolio to transition to modern capabilities and to reduce the risk of schedule delays and, in turn, operational risk. While the NWC is statutorily required to meet quarterly, for years the NWC has elected to meet once a month at the executive-level, reflecting the amount of work to be done and the level of commitment to the nuclear deterrence mission at the highest levels of both Departments.

NNSA continues to learn how to accelerate modernization efforts after having paused both design and production enterprises for decades. We are developing bridge strategies and leap-frog manufacturing capabilities. However, given the large number of systems in design and the amount of infrastructure being built, a perturbation or schedule slip can disrupt multiple systems. The NNSA and the Nuclear Weapons Council are proactively exploring options for when the

plans are disrupted, and remain challenged to learn about delays in a timely manner. This is an area targeted for improvement through risk-based planning.

It is important that we build the right capability and capacity for the future. Understanding the capacity of the enterprise, and the needs of the future are areas we are working together to improve. As described in the Nuclear Posture Review, the production-based resilience program will include bridging strategies, major infrastructure recapitalization, strengthening our supply chain, reducing single points of failure, and providing a resilient and adaptive production enterprise.

5. Critical Minerals and Energy Supply Chains

The modern global economy has increasingly come to depend on access to a number of critical materials that were not widely used or considered essential to manufacturing just a few decades ago. Given that growing dependency and complicated national security implications, I was pleased that the Department released a strategy in February for securing an American supply chain for clean energy.

In addition, the Department has billions of dollars in investments being made available through both annual appropriations and the Infrastructure Investment and Jobs Act related to critical minerals and supply chains.

Question: Secretary Granholm, what is the Department doing to accelerate actions to strengthen and build upon those efforts to reduce foreign dependence on critical minerals and to build more resilient supply chains?

Answer: To build resilient, diverse, sustainable, and secure domestic critical mineral and materials supply chains that support the clean energy transition, DOE coordinates research, development, demonstration, and commercialization application around the following pillars:

1. **Diversify & Expand Supply:** Diversify and expand critical mineral and material supply from varying sources while minimizing waste and increasing techno-economic co-production of materials;
2. **Develop Substitutes:** Innovate alternative materials and/or manufacturing components;
3. **Materials and Manufacturing Efficiency:** Use and process materials efficiently across the entire supply chain and lifecycle;
4. **Circular Economy:** Remanufacture, refurbish, repair, reuse, recycle, and repurpose;
5. **Enabling Activities:** Support crosscutting functions, such as criticality assessments, education and workforce development, stockpiling, advanced theoretical, computational, and experimental tools, etc.

Building on over a decade of research and development (R&D) investment, ongoing analyses, and recent reports published in response to Executive Order 14017,^{[1][2]} DOE is integrating and expanding ongoing critical materials activities across the Department through a Critical

Materials Research, Development, Demonstration, and Commercialization Application (RDD&CA) Program:

- Section 7002(g)(1) of the Energy Act of 2020 directs DOE to establish a Critical Materials RDD&CA Program, including a Critical Materials Consortium.^[1]
- Title III of Division D of the Energy and Water Development and Related Agencies Appropriations Act of 2022 appropriates DOE \$167 million for RDD&CA activities related to critical materials.
- BIL 41003(c) appropriated DOE \$600 million for Critical Materials RDD&CA Program.
- BIL 41003(d) appropriated DOE \$75 million for a Critical Material Supply Chain Research Facility.
- Other related BIL provisions will be considered
- DOE's FY 2023 Budget Request includes \$400,700,000 for critical minerals and materials activities across the Department^[2]

DOE released a Request for Information on the Critical Materials RDD&CA Program on August 9, 2022 to solicit stakeholder engagement on the development and implementation of the Program.^[3]

^[1] <https://www.whitehouse.gov/wp-content/uploads/2021/06/100-day-supply-chain-review-report.pdf>

^[2] <https://www.energy.gov/policy/securing-americas-clean-energy-supply-chain>

^[3] <https://www.energy.gov/sites/default/files/2022-05/doe-fy2023-budget-volume-2-crosscutting.pdf>

^[4] <https://www.energy.gov/articles/biden-harris-administration-launches-675-million-bipartisan-infrastructure-law-program>

Question: In particular, Madam Secretary, how is the Department focusing on securing all energy-related supply chains?

Answer: DOE, along with the Departments of State and Defense, recently executed a memorandum of agreement (MOA) that sets the foundation for a critical minerals stockpile process to support the U.S. transition to clean energy and national security needs. The MOA formalizes an interagency partnership to acquire and recycle selected materials for technologies that range from grid-scale batteries to wind turbines.

Additionally, on March 31, President Biden signed a Presidential Determination permitting the use of the Defense Production Act Title III authorities to include securing reliable and sustainable supply of strategic and critical materials — such as lithium, nickel, cobalt, graphite, and manganese — for large-capacity batteries that are essential for the automotive and stationary storage sectors, and to national defense. The Presidential Determination will help establish a secure supply of critical materials, and the Department will work closely with the Departments of Defense, Interior, Agriculture, and other agencies to plan and carry out activities necessary to build out a resilient and secure battery supply chain.

In addition, DOE drafted 13 issue-specific one-year deep dive assessments under Executive Order 14017, including reports on rare earth magnets, platinum group metals, and semiconductors, which inform the Department's critical materials strategy. A consistent finding across the supply chain assessments was that the United States has significant resources of several of the most critical elements but often lacks the midstream capacity to process and refine these raw materials, even in cases where it has active mining.

Both the newly established Office of Manufacturing and Energy Supply Chains and the Office of Clean Energy Demonstrations (OCED) offer new opportunities to support the development of a domestic lithium-ion battery supply chain. OCED will oversee more than \$20 billion in federal investments in clean energy projects. These projects will work towards the Biden administration's goal of reaching net-zero emissions by mid-century by investing in demonstration projects to allow the United States to test possible clean energy solutions that can provide innovative and effective solutions to real-world problems.

Ranking Member Simpson

6. Geothermal

Geothermal energy is a virtually inexhaustible source of clean, firm power with applications in the electric power, thermal storage, and industrial sectors. The infrastructure bill and the annual appropriations bill both included funding for geothermal demonstration projects.

DOE recently announced launch of the infrastructure bill program, but it was actually a Request for Information to gather feedback. Considering the law passed in November, and text was available well before that, I am concerned with how long DOE is taking to issue its funding opportunities.

Question: [Secretary Granholm] why is it taking so long and when can we expect to see progress?

Answer: The Department of Energy is working to ensure that the voice of the American people is heard in designing our implementation of infrastructure provisions, considering the magnitude of the funding and the far-reaching impacts for developing a carbon-free energy sector. In April, DOE released a Request for Information (RFI) for the geothermal provision designed to solicit feedback on technical gaps and high-need research areas to ensure that these demonstration projects are successful in accelerating the commercialization of this critical technology. The RFI closed in mid-May, and over the past several months DOE has diligently reviewed the responses received and is incorporating the feedback to finalize the funding opportunity announcement with anticipated release in late summer/early fall 2022.

Question: [Secretary Granholm] how does DOE plan on structuring the demonstration program to maximize the impact of taxpayer resources?

Answer: The Enhanced Geothermal Systems Pilot Demonstrations FOA will be structured as a single, rolling submission FOA open for two years with review periods occurring every six months. Having the funding opportunity open for a longer period of time enables maximum participation and higher-quality proposals from a smaller industry that can often struggle to apply for opportunities during their operational activities. Per the language included in the provision, the FOA will have four topic areas including near-field, green-field, super-hot/super-critical, and a demo east of the Mississippi.

7. Impacts of Inflation

Inflation is at the highest levels in 40 years and is being felt all across the economy. DOE has numerous construction projects, large and small, all across the Department – as well as tens of billions of dollars for new demonstration and deployment activities.

Question: [Secretary Granholm] what concrete steps is the Department taking to manage costs and schedule risks for these projects?

Answer: The Department's project teams have updated their risk management plans and reviewed funds allocated for project reserves, both Federal held contingency and contractor controlled management reserve. When appropriate, once the design and technology development are sufficiently matured, project teams execute long lead procurement actions for critical construction commodities, engineered equipment, and items with a limited vendor base such as glove boxes, to mitigate potential supply chain issues. The early procurement of bulk construction commodities may also occur to reduce potential schedule impacts.

The Department's Office of Project Management has updated and expanded its escalation model to enable project specific tailoring based on location, unique project requirements such as the need for specialty steel, rare-earth minerals, and inert gases, and to provide the flexibility to develop and utilize a combination of short-term and long-term compounded annual growth rates based on overall project duration.

For projects that have yet to attain approval of a performance baseline, economic conditions are taken into consideration by the project team during the front-end planning and design phase, when initial cost estimates and schedules, funding profiles, and risk management plans are being developed. Project team assumptions, including the basis of their cost estimate and schedules, proposed funding profiles, and risk management plans, are subject to independent review prior to establishment of the performance baseline.

8. Critical Minerals

Secretary Granholm, your testimony mentions Russia's invasion of Ukraine as a reason for rapid deployment of technologies like renewable energy and electric appliances. I know you are aware that many of these technologies use critical minerals and that the vast majority of these critical mineral supply chains are controlled by China. I hope you would agree that the United States and our allies should not substitute use of Russian energy sources for reliance on Chinese critical minerals.

Question: [Secretary Granholm] do you agree that the United States should avoid increasing dependence on China by making sure that the pace of deploying technologies like electric vehicles does not outstrip the pace of establishing sufficient domestic supplies of critical minerals?

Answer: The production of electric vehicles (EV) and supporting infrastructure will result in many new jobs and technologies, and a cleaner environment. The Department of Energy (DOE) aims to drastically reduce our foreign dependence on critical materials at a pace that keeps up with EV demand through applying a critical minerals and materials (CMM) strategy to enable resilient, diverse, sustainable, and secure domestic supply chains by 1) diversifying supply with balanced co-production; 2) developing substitutes, 3) improving material and manufacturing efficiency, and 4) enabling a circular economy by reducing, reusing, and recycling.

For example, DOE's Office of Fossil Energy & Carbon Management (FECM) critical minerals (CM) programs are sponsoring research to accelerate the domestic commercial production of battery materials, such as lithium, cobalt, manganese, nickel, and graphite, and magnet materials, such as dysprosium, praseodymium and neodymium, needed for EVs from unconventional and secondary feedstocks, such as coal ash, acid mine drainage, and produced water. Furthermore, the domestic auto manufacturers themselves are also actively developing domestic sources for critical materials like lithium, realizing the enormous future domestic market for EVs.

In addition, DOE's Office of Energy Efficiency & Renewable Energy (EERE) is sponsoring research on recycling of critical materials used in batteries such as lithium, cobalt, manganese, and graphite; the domestic production of lithium from new sources such as geothermal brines; and development of substitute materials, all to reduce our reliance upon foreign sources. The Critical Materials Institute, managed by EERE's Advanced Manufacturing Office (AMO), is working with industry partners to commercialize novel extraction and processing technologies. DOE's Office of Science is developing comprehensive databases that will spur new technologies, industries, substitute materials, and domestic production of critical materials. DOE's Advanced Research Projects Agency-Energy is sponsoring work on domestic production of rare earth elements (REE), such as dysprosium, praseodymium, and neodymium, from abundant waste materials such as red mud from the aluminum industry.

In addition, the Department actively collaborates with the United States Geological Survey and other federal agencies to facilitate the future domestic production of critical materials needed for a prosperous domestic economy and clean environment. For instance, DOE is partnering with DOI and DOD on the execution of new Defense Production Act authorities to support critical mineral and material development and processing.

Congressman Calvert

9. NNSA Staffing

Question: [Secretary Granholm] as we discussed during the hearing, the FY2023 request includes a 7% increase for staffing at NNSA. Please provide the number of staff this increase would support and a detailed breakdown of job function(s) for these employees.

Answer: The increase in Full Time Equivalents (FTEs) needed to sustain the U.S. DOE's NNSA core mission pillars is necessary maintain a safe, secure, and effective nuclear deterrent; prevent, counter, and respond to the threats of nuclear proliferation and terrorism worldwide; and, provide naval nuclear propulsion. The table below depicts changes in FTE allocation by NNSA program. To accomplish this mission, we must increase crosscutting capabilities that enable each mission pillar including advancing world-class science, research, technology, and engineering; supporting our people and modernizing our infrastructure; and developing a management culture that operates a safe and secure enterprise in an efficient manner.

The specific functions for the increase in FTEs include program and project management and stewardship; core federal oversight activities; and contract management and evaluation.

From FY 2022 to FY 2023 the planned FTE total increased by 38, from 1,920 to 1,958. The allocation of the additional 38 FTEs is informed by key mission needs across the enterprise, NNSA's strategic drivers, as well as evolving missions and challenges – specifically, in the areas of plutonium pit production, cybersecurity, and bioassurance. The table below reflects how the 38 additional FTE were allocated by Program/Field Office.

NNSA Program, Functional and Field Office	FY 2022 FTE Allocation	FY 2023 FTE Allocation	FTE Allocation Growth
Office of Policy - NA-1.1	10	11	1
Defense Programs - NA-10	246	249	3
Defense Nuclear Nonproliferation - NA-20	184	187	3
Counterterrorism & Counter-proliferation - NA-80	55	59	4
Information Management & CIO - NA-IM	41	47	6
Management & Budget - NA-MB	245	246	1
Congressional & Intergovernmental Affairs - NA-CI	14	15	1
Los Alamos Field Office - NA-LA	93	97	4
Nevada Field Office - NA-NV	80	81	1
NNSA Production Office - NA-NPO	137	142	5

Kansas City Field Office - NA-KC	39	41	2
Savannah River Field Office - NA-SV	48	55	7

10. Manufactured Housing

Traditionally, under the Manufactured Housing Improvement Act of 2000, the HUD Code has had exclusive dominion over construction and safety standards in manufactured housing. Additionally, Section 413 of the Energy Independence and Security Act of 2007 (EISA), which required the Department of Energy to establish energy efficiency standards for manufactured housing, directed that any standards be cost effective for the consumer and for the Department to consult with HUD. I am concerned that these two benchmarks may not have been met.

Question: [Secretary Granholm] does the Department believe standards developed pursuant to the 2007 EISA law require adoption by HUD before they become enforceable?

Answer: Section 413 of EISA provides DOE with the authority to enforce the energy conservation standards by specifying that a manufacturer of manufactured housing that violates a provision of Part 460 “is liable to the United States for a civil penalty not exceeding 1 percent of the manufacturer’s retail list price of the manufactured housing.” (42 U.S.C. 17071(c))

Question: [Secretary Granholm] what specific steps did the Department take to consult with HUD and the Manufactured Housing Consensus Committee in the development of these energy standards and to ensure they are compatible with the HUD code?

Answer: DOE works closely with HUD on manufactured housing, including during the rulemaking adopting energy standards for manufactured homes. Throughout the rulemaking process, DOE regularly consulted with HUD during the formal interagency review process and informally during development. The calls and meetings with HUD consisted of both technical (economists and engineers), legal (General Counsel teams), and senior leadership teams. In addition, DOE presented its proposal to the Manufactured Housing Consensus Committee and took comments and answered questions relating to the proposal in addition to hosting a public meeting for all stakeholders. Based on all of these interactions and general public comment on the proposal, DOE finalized a rule that took in account these considerations, including both formal and informal comment from HUD in support of sized-based energy standards. These changes are discussed at length in the final rule.

Question: [Secretary Granholm] please share with this committee any analysis done by DOE regarding:

- The projected average annual cost increase for homeowners – resulting from increased mortgage costs directly arising from the higher home prices.
- The projected average increase in a down payment requirement related to the higher home price DOE’s standards will cause.

- The number of families that will be priced out of mortgages necessary to buy a manufactured home because they no longer meet mortgage debt to income underwriting requirements due to the increased price of these homes.

Answer: DOE conducted a full economic analysis to account for the increased costs associated with the amended standards as well as the benefits associated with the energy bill savings from the efficiency improvements required to meet both Tier 1 and Tier 2 standards. The full economic analysis can be found in the technical support document (TSD) that accompanies the final rule. In summary, DOE's analysis found that for both Tier 1 and Tier 2 standards, the increase in monthly mortgage payments is expected to be less than the monthly energy bill savings that accompany the efficiency upgrades, leaving consumers with a positive monthly cashflow.^[1]

^[1] TSD, <https://www.regulations.gov/document/EERE-2009-BT-BC-0021-1999>

11. Chinese Influence in Battery Supply Chain

I believe we share the goal of the United States leading the way in the development of battery technologies. Many of the relevant supply chains run through or are wholly controlled by China and companies with ties to the Chinese Communist Party. I believe that DOE funding should be used to support companies that intend to manufacture their products in the United States or in partnership with strategic allies and friendly nations. I am concerned by reports of companies that have received financial support from the federal government taking their innovations to companies and manufacturers controlled by the Chinese Communist Party while there are capable domestic manufacturers. As you know, China continues to lure American companies into its sphere of influence only to steal their intellectual property and reap the full economic benefits.

Question: [Secretary Granholm] what policies does the Department have in place to ensure government R&D funding is not supporting innovation for our geopolitical adversaries, specifically companies with ties to the Chinese Communist Party?

Answer: It is imperative for our Nation's national and economic security that we get the issue of technology and research security right. DOE has always taken this issue seriously and since 2018 has been a leader in the government in deploying risk-based tools to mitigate against these challenges at our 17 National Laboratories and with our R&D partners. These tools are critical to protecting the technologies we all fund as taxpayers so that they create jobs here and make our economy and our Nation stronger.

The key goal of these policies is to address risks to research security and integrity while maintaining an open, collaborative, world-leading science enterprise. Throughout the development and implementation of these policies DOE has been engaging with our interagency partners and the White House Office of Science and Technology Policy (OSTP).

As part of the award process for the DOE Small Business Innovation Research and Small Business Technology Transfer (SBIR/STTR) programs and all ARPA-E programs, the Office of Science and ARPA-E consult with the Office of Intelligence and Counterintelligence (IN) once a proposal has gone through the Technical Merit review process. IN's Counterintelligence Due Diligence Team conducts an assessment of proposals that have a potential foreign nexus and conducts all-source intelligence reviews, as well as coordination with Intelligence Community partners as appropriate, to identify any counterintelligence risks. When proposals are identified as having an identifiable counterintelligence risk, IN briefs program office personnel on those risks. IN may also advise on potential measures available to attempt to mitigate risk should the program choose to continue with the proposal. If these reviews identify potential unlawful activity, the results are also shared with the DOE-IN Counterintelligence Investigations Division and/or Office of the Inspector General (OIG) personnel, as appropriate.

For DOE applied energy and energy infrastructure offices, the planning process for funding opportunity announcements (FOAs) includes a thorough analysis of proposed research activities to discern any potential sensitivities related to national and economic security. This process informs FOA eligibility limitations and parameters for recipient disclosures and internal security risk screening, including coordination with IN. For activities that involve technology areas that are potentially significant to U.S. national and economic security, such as batteries, the Office of Energy Efficiency and Renewable Energy and the DOE energy infrastructure offices, including the Office of Manufacturing and Energy Supply Chains: (1) restrict eligibility to domestic entities absent a waiver approved by DOE; and (2) prohibit members of foreign government-sponsored talent recruitment programs sponsored by countries of risk from participating in the DOE-funded project. DOE also holds recipients accountable for fulfilling relevant export control responsibilities.

Importantly, DOE policies on foreign government-sponsored talent recruitment programs are not limited to applied energy and energy infrastructure offices. Participation in foreign government-sponsored talent recruitment programs from countries of risk is prohibited for DOE employee and contractor personnel across the DOE enterprise, and DOE FOAs require disclosure of foreign talent recruitment program participation by key personnel in the current and pending support disclosures.

DOE continues to strengthen its risk-based research security policies across the Department to ensure that American taxpayer dollars are utilized in a responsible and effective manner through our Laboratories and our grant programs, are directed to support innovative American businesses, and do not fall into the hands of foreign governments or entities tied to foreign governments. These ongoing efforts to strengthen the Department's risk-based research security policies include DOE financial assistance award policies, such as DOE's conflict of interest policy, current and pending support disclosure policy, and U.S. manufacturing policy for DOE-funded intellectual property. The Department continues to strengthen these policies as it implements section 223 of the National Defense Authorization Act for Fiscal Year 2021 (42 USC 6605; P.L. 116-283); requirements under the recently enacted Research and Development, Competition, and Innovation Act (Division B of the CHIPS and Science Act of 2022); National Security Presidential Memorandum 33; and National Security Memorandum 10.

In addition to the research security measures described above, in June of 2021, DOE closed loopholes in the law related to U.S. Manufacturing for federal R&D awards by issuing a first-of-its-kind Determination of Exceptional Circumstances[1] for DOE's Science and Energy programs (the DEC). The DEC ensures that going forward all new innovations developed with taxpayer dollars through DOE Science and Energy programs, must be substantially manufactured in the United States for sales and use worldwide. No other federal agency has a U.S. Manufacturing policy for its R&D programs as strong as DOE's. The DEC significantly enhances protections for taxpayer funded technologies going forward and demonstrates that DOE is committed to ensuring all technologies funded by the Department are manufactured here in America by U.S. industry and labor.

[1] Department of Energy Determination of Exceptional Circumstances Under The Bayh-Dole Act to Further Promote Domestic Manufacture of DOE Science and Energy Technologies issued June 2021, available at <https://www.energy.gov/gc/articles/department-energy-determination-exceptional-circumstances-under-bayh-dole-act-further>.

Question: [Secretary Granholm] is the Department looking into any cases along these lines? How does the Department work with the Department of Commerce to protect American technology and innovation and ensure the economic benefits of federally assisted research and development accrue to American taxpayers?

Answer: DOE engages with its interagency partners including the Department of Commerce (DOC) on research security policy through, for example, the interagency group led by the Office of Science and Technology Policy's National Science and Technology Council's Subcommittee on Research Security (SRS) established by Congress "to coordinate activities to protect federally funded research and development from foreign interference, cyber attacks, theft, or espionage and to develop common definitions and best practices for Federal science agencies and grantees, while accounting for the importance of the open exchange of ideas and international talent required for scientific progress and American leadership in science and technology." Section 1746(a) of the National Defense Authorization Act for Fiscal Year 2020, Public Law 116-92. SRS posted an update on NSPM-33 implementation efforts on August 31, 2022, available here. In addition, DOE has engaged with DOC on DOE's U.S. manufacturing policy for DOE-funded intellectual property.

To expand a secure domestic supply chain for batteries, DOE's implementation of the Bipartisan Infrastructure Law's funding opportunity announcement for battery materials processing and battery manufacturing identified that priority consideration would be given to eligible applicants that will not use battery material supplied by or originating from a foreign entity of concern or export recovered critical materials to a "foreign entity of concern" as defined in 42 U.S.C. 18741 (a)(5). To encourage the expansion of domestic supplies for batteries, the Inflation Reduction Act credit for Clean Vehicles excludes vehicles with battery components that were manufactured or assembled by a foreign entity of concern beginning in 2024. Further, vehicles with batteries containing critical minerals extracted, processed, or recycled from a foreign entity of concern are

excluded from the Clean Vehicle Credit beginning in 2025. Section 13401 of the Inflation Reduction Act of 2022 modifying Internal Revenue Code § 30D(d)(7).

For far too long, the US has been heavily reliant on China and other countries for the materials needed to manufacture batteries, and it is critically important that the US develop a robust, domestic supply chain for this key technology.

Question: [Secretary Granholm] in what ways does the Department's budget request help to eliminate our dependence on other countries and reduce supply chain vulnerabilities?

Answer: DOE's FY 2023 Budget Request^[1] includes \$400,700,00 for critical minerals and materials (CMM) research, development, and demonstration (RD&D) activities across the Department. This includes addressing areas with less historical focus at DOE such as mining technologies, advanced subsurface technologies, and robotics and autonomous operations in mineral extraction including unconventional sources. DOE FY 2023 Crosscut Objectives for building resilient, sustainable, and secure CMM supply chains include:

- Diversify a domestic and trusted source of CMM in a safe, sustainable, and environmentally just way;
- Develop safe, responsible, and environmentally just domestic processing and refining capabilities for CMM;
- Develop substitutes for CMM that use materials with an assured supply, are easily and economically processed, and can have a minimized environmental footprint;
- Expand and improve efficient use, recycling, and second-life application of CMM; and
- Develop a high-precision, material-specific understanding of the global supply chain into the future.

These crosscut objectives aim to both bolster domestic supply chains for CMM as well as mitigate vulnerabilities in those supply chains through a multi-pronged approach. The development of resilient, sustainable, and secure supply chains for CMM will also require partnerships with ally partners. Thus, RD&D activities are coordinated with related CMM activities across the Department; the International Affairs Office identifies and facilitates opportunities with key foreign and ally partners

The Bipartisan Infrastructure Law (BIL) funds will expand and accelerate these activities by supporting additional technology development, demonstration, scale-up, and deployment of battery and critical minerals recycling, battery material processing, and rare earth element demonstration from deleterious materials.

^[1] DOE FY2023 Budget Justification, Volume 2. Crosscutting Activities, pg. 23-29.
<https://www.energy.gov/sites/default/files/2022-05/doe-fy2023-budget-volume-2-crosscutting.pdf>

Congressman Newhouse

12. The Pacific Northwest National Laboratory/ Net Zero (NZL) Initiative:

Sec. Granholm, thank you for your virtual visit to PNNL this last year and your recent comments at the groundbreaking for the Grid Storage Launchpad. I hope we get to see you out in the district at the lab sometime soon. I fully appreciate and agree that we must move to address the challenges that our changing climate presents. But as I've said many times, we must innovate our way toward this future, not eliminate options and hope that government can solve the problem.

In the case of buildings, for instance, we cannot afford to just replace everything with shiny new zero carbon buildings. We are going to have to learn how to cost-effectively retrofit and update our existing infrastructure. We have to use what we already exists. I understand that last year, the Department identified several of the labs, including PNNL, and the Idaho National Lab as pilot sites for this effort.

Question: [Secretary Granholm] can you share a little bit more with the Committee about this initiative and the opportunities you see for it to impact more than just the National Labs themselves?

Answer: The Net Zero Laboratory (NZL) Pilot Initiative was initiated in October 2021 and announced publicly in partnership with four DOE National laboratories in May 2022: National Renewable Energy Laboratory, Pacific Northwest National Laboratory, National Energy Technology Laboratory and Idaho National Laboratory. NZL lays the foundation for one of the first-ever models for addressing hard-to-decarbonize facility operations that will enable similar efforts at facilities across DOE, federal and state governments, and industry with pledges to decarbonize.

The Initiative ensures that the participating laboratories have multi-year plans that include robust assessments of their emissions portfolios and cost per GHG abatement scenarios of opportunities to reduce their scope 1, 2 and 3 emissions. The labs will use standard retrofits and upgrades to improve energy-efficient and lower cost operations, but also harness demonstrations of their unique R&D capabilities which offer site and geographic specific emission reductions technology pilots that can inform other efforts. Initiative activities may also include public-private partnerships that increase carbon-free electricity in the local electrical grid.

PNNL's engagement in NZL aligns closely with its Laboratory-wide initiative to achieve net-zero emissions and energy-resilient operations (NZERO) by 2030. The lab is focused on using its research capabilities and campus assets in Richland and Sequim as testbeds to enable knowledge sharing and accelerate technology commercialization. The aggressive goals are to achieve net-zero greenhouse gas (GHG) emissions with 24/7 carbon-free energy on its campuses, while enhancing the resilience of its operations to utility disruptions, reducing other indirect emissions that result from its operations, and growing local utility capacity for responsive load control. The

planned engagement with the local utility providers will enable opportunities for other large electricity consumers in their local communities to adopt similar approaches.

PNNL has demonstrated success using its campus as a research and development (R&D) testbed for technology demonstrations in other areas—both for technologies developed by PNNL and by others—to expand the impact of those advancements. As part of its efforts, PNNL will partner with local utilities to meet its needs for real-time, responsive load control; with industry to share and gain best practices, collaborate on demonstration/testing projects and advance shared goals; with state government to leverage clean building mandates and investments; and with community organizations to deploy technologies for reducing emissions within the community and to support clean building STEM workforce development activities.

13. The Pacific Northwest National Laboratory/ Office of Science Facility Operations and Construction Funding

Sec. Granholm, I want to express my concern at the lack of focus being put on early-stage research and the DOE Office of Science. In my district, PNNL stewards two user facilities for the Department that serve around 2000 users, and I'm particularly concerned to see cuts proposed to the Environmental Molecular Sciences Lab, or EMSL. I understand DOE and the lab have been planning for exciting new opportunities that can help us stay at the forefront of the \$4 trillion bioeconomy, and I was disappointed to see only a passing mention of this in your request. As China is building a system of laboratories modeled on our own, it is critical that we make these investments to keep America at the forefront of innovation globally.

Question: Secretary Granholm, what role does basic, fundamental research play in meeting the Administration's priorities?

Answer: The Department of Energy's (DOE) Office of Science delivers the scientific discoveries, capabilities, and major scientific tools that advance the scientific and technology foundations necessary to accomplish the DOE mission areas. The FY 2023 Budget Request continues to provide support for chemistry, materials sciences, biology, and physics research as well as operation of world-leading user facilities required to create the knowledge foundation to spur discoveries and innovations that will advance the Department's missions in energy, environment, and national security.

Question: [Secretary Granholm] do you know how many users will be impacted by the proposed cuts to facility operations in your FY23 budget request for the Office of Science?

Answer: We don't expect a large impact on the number of users served based on the funding levels proposed in the FY 2023 Budget Request. In FY 2021, the Office of Science served over 32,800 users. We estimate that the 28 Office of Science User Facilities will serve nearly 34,000 users at the level requested in the FY 2023 Budget Request. The modest increase in users is due

in part to the ramp up of our newest user facility, the Facility for Rare Isotope Beams (FRIB) at Michigan State University, which held a ribbon cutting ceremony on May 2, 2022, to celebrate FRIB officially opening for scientific research.

Question: [Secretary Granholm] do you know how much demand there is for access to these facilities, or how oversubscribed they are?

Answer: On average, the Office of Science User Facilities are oversubscribed by a factor of three to four. In other words, for every user proposal that is accepted, there are two or three user proposals that cannot be accommodated.

Congressman Reschenthaler

14. America's Strategy to Secure the Supply Chain for a Robust Clean Energy Transition Document

DOE's *America's Strategy to Secure the Supply Chain for a Robust Clean Energy Transition* document called for the creation of a critical materials list for the department's vital mission areas.

Question: [Secretary Granholm] please describe the process and selection criteria for material to be considered on this list. How does this list of materials differ from the Department of the Interior's Critical Minerals List? Do materials placed on the DOE's critical materials list receive expedited or preferential permitting timeframes?

Answer: The Department of Energy (DOE) established a methodology to assess material criticality in 2010 based on two dimensions: importance to the clean energy economy, and potential for risk of supply disruption.^[1] DOE updated the approach for an internal analysis in 2019 to consider importance to energy more broadly.^[2] The methodology differs from the Department of Interior's methodology in that it considers future scenarios of energy technology deployment. This methodology is consistent with the statutory definition of "critical materials" provided Sec. 7002(a)(2) of the in the Energy Act of 2020 (Sec. 7002 (a) (2)). In the coming months, DOE plans to perform another analysis leveraging this methodology to determine material criticality in the short- and mid-term for energy.

^[1] <https://www.energy.gov/sites/prod/files/2019/06/f63/2010%20Critical%20Materials%20Strategy%20Report.pdf>

^[2] https://www.energy.gov/sites/default/files/2021/01/f82/DOE%20Critical%20Minerals%20and%20Materials%20Strategy_0.pdf

15. Critical Minerals from Coal and Coal-Byproducts

DOE has identified numerous resources of battery metals, rare earths, and semiconductor raw materials in coal-based resources. The private sector is interested in using these resources to re-shore our critical mineral supply chains. Those efforts are responsive to recommendations in the White House's 100 Day Supply Chain review that was released last year.

Question: [Secretary Granholm] how does your department plan to support and encourage efforts to extract critical minerals from coal and coal-byproducts?

Answer: The Office of Fossil Energy and Carbon Management's (FECM) Office of Resource Sustainability is focused on accelerating the production of CM from unconventional and secondary sources, especially from coal and coal byproducts. Funding for the program has been directed toward the research, development, demonstration, and deployment (RDD&D) of novel and advanced technologies to enable cost effective and sustainable extraction of REE from these types of resources using environmentally benign and economically efficient processing. DOE has funded the construction of four domestic small pilot-scale facilities to produce REE and CM

from acid mine drainage, coal fly ash, coal refuse, and lignite, and has recently funded the development of 8 pre-FEED (Front end engineering and design) studies that will be designed to produce 1-3 tonnes/day of REE and CM from unconventional and secondary sources. With the recent Bipartisan Infrastructure Law (BIL) passage, DOE is taking these technologies to the next level, producing FEED studies and building an REE Demonstration Facility that will produce sizeable amounts of refined rare earth metals from unconventional feedstocks, such as acid mine drainage and mine waste.

FECM released a Request for Information (RFI) this past February to solicit feedback from the public regarding the REE Demonstration Facility highlighted in the BIL appropriations. A Funding Opportunity Announcement (FOA) for the REE Demonstration Facility is tentatively planned for release by August 15. An FOA for additional FEED studies for large scale production of REE from coal and coal byproducts using BIL funding (Section 41003(b), Rare Earth Mineral Security) will also be released in FY 2023.

The buildout of a robust domestic supply chain must be informed by data regarding the resource potential across the country. FECM is also funding 13 regional awardees under the Carbon Ore, Rare Earth and Critical Minerals (CORE-CM) Initiative. The awardees will initiate regional coalition efforts comprised of local and state government, communities, academia and industry to investigate the full economic potential value of domestic resources for producing CM and high-value, nonfuel, carbon-based products. The CORE-CM coalitions will holistically assess the potential for upstream extraction of resources and physical separation, the midstream processing, separation, recovery and purification of CM, and also onshore downstream manufacturing that incorporates these materials into consumer or national defense products. They will evaluate the potential for transforming coal, oil, and gas facilities to support domestic CM supply chains, as well as the workforce development needs within their respective regions.

16. BioEnergy Carbon Capture and Storage

BioEnergy Carbon Capture & Storage is emerging as a key component of the energy technology of the future and has the capability to support net negative greenhouse gas emission baseload power, with retrofit of existing fossil energy plants.

Question: [Secretary Granholm] what is DOE doing to bring BECCS technology online, and how can Congress assist with those efforts?

Answer: The Department is coordinating efforts across program offices on carbon dioxide (CO₂) removal (CDR) technologies including bioenergy with carbon capture and storage (BECCS). For example, DOE's FY 2023 Budget Request includes a crosscut activity on CDR, which includes BECCS. This is sometimes also referred to as biomass with carbon removal and storage. This effort coordinates activities across DOE and focuses on the critical research, development, and demonstration (RD&D) needed to lower costs and validate technologies and CDR pathways for achieving net removal of CO₂ from the atmosphere. Additionally, the Department recently conducted its first Carbon Negative Shot Summit on July 20, 2022, which brought together DOE, members of Congress, and various stakeholders to discuss opportunities for advancing

CDR technologies. Congress can assist DOE by supporting its FY 2023 Budget Request for the CDR crosscut.

17. Methane Emissions Reduction Technologies

Despite natural gas production nearly doubling in the U.S., methane emissions from the industry have decreased. In the Appalachian basin, the largest natural gas field in the world, methane leak rates are 85% lower than the U.S. average.

Question: [Secretary Granholm] what investments is the Office of Fossil Energy and Carbon Management making in methane emissions reduction technologies to ensure we continue this exceptional progress?

Answer: Through its Methane Mitigation Technologies Program, FECM is focused on accelerating the development and demonstration of methane quantification and methane mitigation technologies so that they can be quickly applied throughout our natural gas infrastructure as part of a complete methane emission reduction and natural gas system efficiency strategy. This work can be broken down into several research categories based upon the prime function of the various technologies including a) sensing leaks; b) quantifying leaks (measuring volume and rate of leaks); c) minimizing leaks (ex. technologies to monitor and detect pipeline cracks and corrosion, and liners and coatings to prevent leaks); d) predicting leaks (ex. using artificial intelligence and machine learning to analyze data to predict and prevent leaks); e) fixing leaks (ex. developing technologies to repair corrosion issues in-situ); f) leak-tight components (ex. developing or retrofitting compressors, pneumatic controllers, valves to reduce or eliminate leaks; g) validating technologies (ex. field-verifying new technologies at DOE test site; and h) reducing venting and flaring (ex. technologies to convert stranded (flared) gas into higher-value products). Through these technology areas, FECM is dedicated to eliminating methane emissions across the domestic natural gas value chain.

Additionally, FECM works with various stakeholders including natural gas producers, who are beginning to pay more attention to leaks and are deploying sensors to alert them when they occur. The DOE is working to develop systems that can integrate multiple sensor networks to enable continuous monitoring of methane emissions across large swaths of territory in oil and natural gas producing regions. Another priority goal of the DOE-FECM program is to design, develop, and deploy an integrated methane monitoring platform that will enable early detection and quantification of methane emissions across the entire natural gas infrastructure. Predicting the likelihood of leaks, and quickly identifying them for repair, can dramatically reduce the amount of methane lost from the system and help us maximize the benefits of using natural gas as an energy source.

In addition, DOE is working with the Environmental Protection Agency (EPA) to improve the accuracy of the methane emissions estimates EPA uses to track greenhouse gas (GHG) emissions. Understanding where the greatest GHG contributors are will enable us to prioritize research efforts to mitigate further emissions. Additionally, FECM coordinates with ARPA-E methane programs, including REMEDY (Reducing Emissions of Methane Every Day of the Year), which aims to reduce methane emissions from natural gas-fired lean-burn engines, oil and

gas flares, and coal mine ventilation air methane” [REMEDY | arpa-e.energy.gov](#), and MONITOR (Methane Observation Networks with Innovative Technology to Obtain Reductions), which aims to develop technologies to locate and measure methane emissions associated with natural gas production [MONITOR | arpa-e.energy.gov](#)”

18. LNG Exports

Vladimir Putin is using energy as a geopolitical weapon, most recently halting gas supplies to Poland and Bulgaria.

Question: [Secretary Granholm] is DOE doing to facilitate long-term exports of low carbon LNG to help our allies in Europe? Specifically, how many LNG export permits are pending, what is the administration doing to expedite those permits, and what infrastructure investment is needed to move LNG from states like Pennsylvania to our allies abroad?

Answer: Currently, every operating or under construction project has approvals from DOE to export to its fully authorized capacity to any country not prohibited by U.S. law or policy, and all operating export projects are exporting at or near their authorized capacities.

DOE has granted exports up to the fully authorized capacity of 19 U.S. projects. Among the projects with DOE export approvals, six are currently operating (Sabine Pass, Cove Point, Corpus Christi, Cameron LNG, Elba Island, and Venture Global Calcasieu Pass), one project is temporarily offline (Freeport LNG, expected to return to service in October 2022), and three projects have reached a final investment decision and are currently under construction or expanding (Golden Pass, Venture Global Plaquemines, and Corpus Christi Stage III). The remaining 10 projects with approvals have not yet made a final investment decision.

DOE has also granted exports of U.S. natural gas as liquified natural gas (LNG) from proposed liquefaction facilities in Canada and Mexico. To date, DOE has granted exports of U.S. natural gas as LNG to non-free trade agreement (FTA) countries in a cumulative volume of over 48 billion cubic feet per day (bcf/d).

There are currently two applications from proposed liquefaction facilities in Mexico, one that would expand a proposed project, Phase II of Energia Costa Azul, by 0.44 bcf/d. DOE previously granted all of the requested volumes of exports from Energia Costa Azul to FTA countries and has also approved the majority of the requested volumes for export to non-FTA countries, with only the expansion application for 0.44 bcf/d of additional exports from Energia Costa Azul Phase II to non-FTA countries remaining.

The second pending application for exports of U.S. LNG from proposed liquefaction facilities in Mexico is from the Vista Pacifico project seeking to export up to 0.55 bcf/d of U.S. natural gas as LNG. DOE has granted the requested volumes for export to FTA countries from Vista Pacifico, with the application to export to non-FTA countries still pending.

In July 2022, DOE announced that Environmental Assessments (EAs) are being undertaken to examine the environmental impacts from the two pending applications for exports to non-FTA countries from Energia Costa Azul Phase II and Vista Pacifico. The EAs are being undertaken to progress DOE's reviews of the applications and are set to be finalized by the end of October

2022. Costa Azul Phase II and Vista Pacifico are expecting to be operational in 2028/2029 and 2027, respectively, pending a positive final investment decision.

All remaining pending applications are for applications still undergoing environmental review at the Federal Energy Regulatory Commission or the Maritime Administration within the U.S. Department of Transportation. DOE acts on applications to non-FTA countries once the environmental review of the application is complete.

19. High Assay Low Enriched Uranium (HALEU)

High Assay Low Enriched Uranium (HALEU) is needed by almost all reactor designs being funded under the Advanced Reactor Demonstration Program.

Question: [Secretary Granholm] what is DOE's plan for bringing domestic HALEU capacity online as soon as possible?

Answer: The Department is in the early stages of implementing the HALEU Availability Program that was authorized by Congress in the Energy Act of 2020. Subject to appropriations, the Department will work to make available small quantities of HALEU from limited DOE inventories and from operation of the HALEU enrichment cascade at Piketon, Ohio, and to collaborate with the private sector to build out commercial U.S. HALEU production and supply chain capability.

The Administration requested \$95 million for the Program in FY 2023. This is \$50 million more than was received in FY 2022, the first year of funding. With that increase, the Department would anticipate: (1) initiating the recovery and down-blending of limited quantities of DOE non-defense uranium inventories, (2) standing up and operating the HALEU enrichment facility in Piketon, Ohio, and (3) addressing critical near-term supporting elements of the Program such as cost-effective HALEU transportation and processing the HALEU to the various fuel forms needed.

In addition, the National Nuclear Security Administration requested \$51 million in its FY 2023 budget to process HALEU scrap material into HALEU oxide, which will be made available for advanced reactors. This project will also reduce costs to NNSA associated with storing and securing the material at the Y-12 National Security Complex.

20. Long Term Liability Challenges with Carbon Capture and Storage

The National Petroleum Council (NPC) Meeting the Dual Challenge – A Roadmap to At-Scale Deployment of Carbon Capture, Use and Storage Report (2019) Chapter Three - Policy, Regulatory and Legal Enablers - makes the following recommendation on Page 30:

- The NPC recommends that DOE convene an industry and stakeholder forum to develop a risk-based standard to address long-term liability. The forum should be established concurrently with the activation phase. Options to be considered for resolving long-term liability should include:
 - Applicability and limitations of private insurance

- Government assumption of liability for early mover project to incentivize and de-risk market creation
- Transfer of liability risk and oversight to the government when secure geologic storage is demonstrated, likely with operators paying a fee into a stewardship or trust fund.
- Layered responsibility approach for risk pooling among operators and government
- When evaluating damage claims, consider the societal benefit of CO2 storage

Question: [Secretary Granholm] is your department doing to help launch at-scale carbon capture and storage in the United States? On the long-term liability front, many other OECD countries are already addressing this important investment criteria for at-scale deployment.

Answer: Since the National Petroleum Council (NPC) study was published, there has been significant progress to help launch at-scale carbon capture and storage (CCS) in the United States. The BIL provides more than \$12 billion in funding for carbon capture, direct air capture, industrial emission reductions, and the construction of regional hubs.

As the Department implements these programs, we will be evaluating technical, financial, and regulatory criteria for at-scale deployment. DOE plans to make available over \$2 billion to expand on the geologic characterization and site development through the existing Carbon Storage Assurance Facility Enterprise (CarbonSAFE) program. This funding will help address the feasibility, siting, permitting, and construction stages for CCS projects that prioritize saline geologic storage sites with at least 50 million tons of capacity.

Question: [Secretary Granholm] Will your department be convening an industry and stakeholder forum to develop a risk-based standard to address long-term liability as recommended by the 2019 NPC carbon capture and storage (CCS) study? There is a long-term liability challenge storing CO2 in federal waters that the NPC CCS study identified, and it recommends your department launch an industry forum to examine this – are you planning to do so?

Answer: Since the NPC study was published, the Utilizing Significant Emissions with Innovate Technologies (USE IT) Act and the BIL were passed and there are efforts underway that will help address these NPC recommendations. The USE IT Act, Div. S, sec. 102 (d)(2)(D), Pub. L. 116-260, 134 Stat. 1182 2243 directs the establishment of not less than two regionally-based task forces to:

- (1) identify challenges and successes that permitting authorities, project developers, and operators face to permit carbon capture, utilization, and storage (CCUS) projects in an efficient, orderly, and responsible manner; and
- (2) provide recommendations to improve the performance of the permitting process and regional coordination for the purpose of promoting the efficient, orderly, and responsible development of CCUS projects and carbon dioxide pipelines Section 40307 of the BIL amended the Outer Continental Shelf Lands Act to authorize the Secretary of the Interior

to grant leases, easements, and rights-of way to support CCUS activities on the outer continental shelf. It also required the Department of the Interior to promulgate related regulations within a year. In light of these developments since 2019, DOE will prioritize support for these relevant efforts and does not plan to convene a separate industry forum at this time.

21. NETL Report on Quantification of Methane Emissions from Marginal (Small Producing) Oil and Gas Wells

In December 2021, NETL concluded research on *Quantification of Methane Emissions from Marginal (Small Producing) Oil and Gas Wells* (Project Number DE-FE003170). On NETL's website, the current status is listed as follows: A draft final report was delivered to NETL on December 6, 2021 and is currently under review by DOE for release to the public.

Question: [Secretary Granholm] what is the status of this report, and when can we expect the findings to be made public?

Answer: The report on marginal wells was published April 28, 2022. The report for the project (DE-FE0031702) has been released and can be found from a link on the National Energy Technology Laboratory's (NETL) website to the Office of Scientific and Technical Information's (OSTI) website: <https://www.osti.gov/biblio/1865859>.

22. Uranium-233 Supply

America has a significant supply of Uranium-233 (U-233), which is currently being down blended and disposed of, despite potential uses in thorium reactors. During her confirmation hearing, Dr. Katy Huff agreed with Senator Roger Marshall that the domestic U-233 inventory is valuable, and I strongly agree given Chinese and Russian investments in advanced reactor technologies.

Question: [Secretary Granholm] does DOE support investments in closing the fuel cycle with nuclear waste recycling and the development of alternative fuel cycles, like thorium cycle, that utilizes U-233? If so, what do you need from Congress to further these efforts?

Answer: The Office of Nuclear Energy is supporting a wide range of research, development, and demonstration activities including innovative technologies for recycling of used fuels and for fast reactors that can effectively utilize the useful component of used fuels. The current research effort is focused on providing multiple recycling technology options that will enable recycling of used fuels from various reactor applications. The goal is to continue to improve the economics of recycling technologies, paving the way for future, commercially viable industrial applications.

Regarding the development of alternative fuel cycles such as the thorium cycle, studies have shown that the cost of developing a thorium fuel cycle far outweigh the benefits when compared to the existing uranium fuel cycle. We are exploring these options in much greater detail as we develop the Alternative Fuels Report requested by Congress in Section 2001 (b)(3) of the Energy

Act of 2020. The Office of Nuclear Energy is also making small investments with industry in basic thorium fuel and reactor research. The Uranium-233 currently located at the Oak Ridge National Laboratory is under the management of the Office of Environmental Management and pursuant to Congressional direction is currently being dispositioned. We appreciate the support of Congress as we expand the benefits of nuclear energy.

QUESTIONS FOR THE RECORD
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT
U.S. HOUSE COMMITTEE ON APPROPRIATIONS

**Hearing: Fiscal Year 2023 Budget Request for the U.S. Department
of Energy**
Thursday, April 28, 2022
(Second Round)

Chairwoman Kaptur

1. DOE Efforts to “Meet the Streets”

As we have discussed, DOE is launching a lot of exciting programs funded through the \$62 billion included in the Infrastructure Investment and Jobs Act for DOE and annual appropriations from this Subcommittee. These efforts aim to build a clean energy future. However, there are many communities throughout the country that are unaware of DOE’s work and the opportunities that will arise from this funding.

Question: What is DOE doing to expand outreach to all communities throughout America – particularly underserved communities that are not as familiar with DOE’s work – to inform them of opportunities and assist them with being able to participate in all these initiatives to modernize their energy systems?

Communities across the country are responding to challenges relating to energy prices, climate change, and building a clean energy future. Can you elaborate about DOE programs that are helping to develop local strategies and action plans – so a place like Toledo Ohio with unique needs and capabilities – can leverage federal resources to address their local issues, strengthen energy security, and counteract growing regional inequalities?

Answer: The Department of Energy has been engaging with underserved communities through the various Initiatives and Executive Orders (EOs), including EO 13985, which created the Department’s Equity Action Plan, and EO 14008, which created the Justice40 Initiative.

Within DOE’s Equity Action Plan, the Department identified five actions that will help inform communities of opportunities and assist them with being able to access DOE resources. Particularly, the Department has goals aimed at increasing opportunities for new applicants to DOE funding opportunities by improving how DOE communicates about its opportunities and

alleviate resource constraints (e.g., financial, IT, human resources, etc.), increasing participation in Research and Development and financial assistance programs to diversify recipients of financial assistance from the agency, and expanding strategic Tribal and stakeholder engagement across DOE programs.

Further, DOE has been progressively rolling out its Justice40 Initiative to ensure that 40% of the benefit of its 144 covered programs will benefit Disadvantaged Communities. This rollout is occurring through a combination of public webinars and speaking engagements, including a webinar on August 17, 2022, that had over 1000 attendees, as well as through its upcoming Justice Week, which will convene internal and external stakeholders to discuss the work the Department has been doing this past year on issues of equity and justice and understand the path ahead to institutionalize this important work.

Additionally, the Department has established a team of six Regional Specialists in the Office of Congressional and Intergovernmental Affairs, each of whom acts as an external facing point of contact to state and local stakeholders within a 4-5 state region. These Regional Specialists keep community partners apprised of funding opportunities and technical assistance available from DOE.

Finally, the Department has made deep dive engagements in areas with high sensitivity due to existing environmental justice concerns, i.e., gulf coast and Salton Sea, with participation from the Secretary of Energy and from Director of the Office of Economic Impact and Diversity.

2. Weatherization

The weatherization program is one of DOE's most meaningful "meet the streets" efforts. The weatherization program delivers energy efficiency and cost savings to low-income Americans across our nation, and it is a lifeline for millions recovering from economic turmoil. To make the program work better, I have been fighting to bring the weatherization related federal agencies to the same table. On the ground, weatherization participants do not see the difference between LIHEAP, DOE, or HUD funding.

Question: There have been several, recent developments related to this program, such as the recently authorized enhancement and innovation program, the new Weatherization Readiness Fund, the proposed LIHEAP Advantage Pilot, and pilot efforts at HUD focused on better coordination. How can the weatherization program be used to deliver a more equitable, just, and resilient reality for Americans struggling to heat and cool their homes?

Answer: Since its inception, the U.S. Department of Energy's (DOE) Weatherization Assistance Program (WAP) has weatherized more than 7 million homes and reduces energy costs for low-income households at or below 200% of Federal Poverty Guidelines by increasing the energy efficiency of their homes, while ensuring their health and safety. Through weatherization improvements and upgrades, these households save on average \$372 or more every year.^[1]

Weatherization returns \$2.78 in non-energy health and household related benefits for every \$1.00 invested in the WAP. Non-energy benefits represent tremendous benefits for families whose homes receive these services.^[12]

DOE received \$15 million to establish a “Weatherization Readiness Fund” (WRF) in FY 2022 to address structural or health and safety repairs needed before some low-income homes in most need of the energy efficiency benefits are eligible for weatherization assistance. WRF will not only enable weatherization, but it will also improve resiliency by ensuring homes are air-tight and insulated to protect against extreme heat and cold, while also improving indoor air quality. This funding will allow DOE and Grantees to design programs and address a portion of the highest priority homes. DOE is requesting \$30 million in FY 2023 for the WRF. DOE recently released guidance on the WRF in April 2022.^[13]

^[12] Weatherization Works - Summary of Findings from the Retrospective Evaluation of the U.S. Department of Energy’s Weatherization Assistance Program, ORNL_TM-2014_338.pdf, expressed in 2022 dollars. https://weatherization.ornl.gov/wp-content/uploads/2021/01/ORNL_TM-2020_1566.pdf

^[13] Environmental Emissions Nonenergy Benefits, ORNL_TM-2015_126.pdf

^[14] Weatherization Readiness Funds Guidelines, <https://www.energy.gov/eere/wap/articles/weatherization-program-notice-22-6-weatherization-assistance-program>.

3. **Prioritizing Energy Security**

Russia’s unprovoked invasion of Ukraine has uprooted the global energy landscape. Our continued reliance on fossil fuels makes us susceptible to the whims of dictators and authoritarians who dominate global energy markets. The Russian invasion of Ukraine and Putin’s price spike remind us that more needs to be done to accelerate our transition to domestic clean energy sources. Indeed, companies like First Solar and Toledo Solar in my region of Northwest Ohio, are great examples of companies that are creating good-paying jobs here in the US and are not dependent on China or Russia. We need to continue supporting their efforts, which are key to our energy security.

Question: What steps has DOE taken to examine and assess its research, development, demonstration, and deployment programs to ensure that energy security goals are being prioritized across the Department?

Answer: DOE’s mission is to ensure America’s security and prosperity by addressing its energy, environmental, and nuclear challenges through transformative science and technology solutions. DOE takes energy security into account throughout our programs.

The Office of Energy Efficiency and Renewable Energy (EERE) considers energy security when it develops alternative fuels and renewable energy and efficiency technologies to reduce our vulnerability to foreign supply disruptions. Every day, the Office of Cybersecurity, Energy Security, and Emergency Response (CESER) works to protect critical energy infrastructure to all hazards, mitigate the impacts of disruptive events and risk to the sector overall through preparedness and innovation, and respond to and facilitate recovery from energy disruptions.

The Office of International Affairs engages foreign countries to enhance the energy security of United States and our allies. The Office of Nuclear Energy (NE) is also working to enhance our energy security by supporting domestic supply of nuclear fuel, particularly high-assay low-enriched uranium (HALEU) for advanced reactors because global supply of HALEU is currently dominated by Russia.

Question: As we seek to cut off fuel supplies that directly fund Putin's atrocities in Ukraine, I understand that DOE has been working to support U.S.-made energy production and exporting our energy sources – like natural gas – and clean energy technologies to our friends in Europe who are looking to do the same. Could you provide more detail about these efforts?

Answer: Domestic and global energy security is a top priority for the Administration and the Department of Energy, DOE's recent actions -both those with immediate effect as well in research, development, demonstration, and deployment reflect this priority.

The Department has convened both domestic and allied global energy producers to help increase current energy production and supplies. The most recent projections from the U.S. Energy Information Administration show that the U.S. is currently producing record levels of natural gas and near-record levels of crude oil, with new highs expected to be achieved in 2023.

DOE has also issued LNG export authorizations in 2022 that allow all U.S. export projects, including all those operating and under construction, to export their authorized capacity to any country not prohibited by U.S. law or policy, including all of Europe. So far in 2022, approximately 70% of U.S. LNG exports landed in Europe.

DOE's Office of Fossil Energy and Carbon Management (FECM) also has an extensive research portfolio that is focused on mitigating the environmental impacts of oil and gas production, including assuring a leak-tight supply chain for natural gas. For instance, on August 5, FECM announced up to \$32 million in funding toward the research and development of new monitoring, measurement, and mitigation technologies to help detect, quantify, and reduce methane emissions across oil and natural gas producing regions of the United States. The projects awarded through this funding opportunity announcement (FOA) will help ensure an efficient, resilient, and leak-tight U.S. natural gas infrastructure, while supporting President Biden's national goal to cut global methane emissions by 30% from 2020 levels by 2030.

At the same time, DOE is focusing on the development of clean energy technologies so that we can assure continued energy security in the future as we transition away from fossil fuels.

4. Critical Minerals and Energy Supply Chains

The modern global economy has increasingly come to depend on access to a number of critical materials that were not widely used or considered essential to manufacturing just a few decades ago. Given that growing dependency and complicated national security implications, I was

pleased that in February the Department released a strategy for securing an American supply chain for clean energy.

In addition, the Department has billions of dollars in investments being made available through both annual appropriations and the Infrastructure Investment and Jobs Act related to critical minerals and supply chains.

Question: What is the Department doing to accelerate actions to strengthen and build upon those efforts to reduce foreign dependence on critical minerals and to build more resilient supply chains?

Answer: Historically, the Department of Energy (DOE) has focused on the extraction, separation, and recovery of critical minerals (CM), including rare earth elements (REE), from unconventional and secondary domestic resources and electronic waste materials. DOE's Critical Materials Institute (CMI), an Energy Innovation Hub led by Ames Lab and managed by the Office of Energy Efficiency & Renewable Energy's (EERE) Advanced Manufacturing Office (AMO), has made progress to reduce import-reliance of CM. CMI is working with industry partners, such as Rio Tinto and Momentum Technologies, to leverage CMI-developed technologies to improve the recovery and enhance the processing of CM and REE in the U.S.

Since 2019, DOE FECM has led in the development of four first-of-a-kind (FOAK), operating, small-pilot facilities that utilize conventional separations technologies to produce small quantities of all 14 REEs, as well as several other CM, including cobalt (Co), nickel (Ni), and gallium (Ga) from coal-based resources and coal waste materials.

Additionally, eight advanced feasibility studies to aid in scale-up of these and related processes were completed in early 2022. With the Bipartisan Infrastructure Law (BIL) funding, DOE is moving forward on the creation of the REE Demonstration Facility, which will produce 1-3 tonnes per day of refined REE (~10% 2020 imports) and other CM from acid mine drainage and waste sources. A Request for Information (RFI) was released for the facility in February 2022, and a Funding Opportunity Announcement (FOA) will be released in August 2022.

In addition, FECM's Carbon Ore, Rare Earth and Critical Minerals (CORE-CM) Initiative is focused on gathering information on unconventional and secondary sources in basins across the country to assess the potential domestic resource of the variety of critical materials necessary for clean energy supply chains.

Question: In particular, how is the Department focusing on securing all energy-related supply chains?

Answer: DOE is applying multi-pronged CM and materials strategy to enable resilient, diverse, sustainable, and secure domestic supply chains by 1) diversifying supply with balanced co-production; 2) developing substitutes, 3) improving material and manufacturing efficiency, and 4) enabling a circular economy by reducing, reusing, and recycling. DOE's Critical Minerals and Materials (CMM) Crosscut funds research, development, and demonstration (RD&D) and commercial activities across a wide variety of critical materials and energy technologies.

Additionally, DOE requested funding in FY 2023 for a new office of Manufacturing and Energy Supply Chains (MESC) that will work with the existing CMM Crosscut offices (especially FECM and EERE) to accelerate the deployment of extraction, processing, manufacturing, and recycling technologies.

In addition to the REE Demonstration Facility, which may produce other CM besides REE, and the other activities mentioned above, DOE has several other BIL provisions, which will help to secure domestic energy-related supply chains. A FOA for the Battery Materials Processing and Battery Manufacturing Grants Programs was released this spring, which will help establish midstream and downstream demonstration and commercial scale activities for a broad range of battery CMs.

The Hydrogen Hubs funded by the BIL will help to address the resource needs for future fuel-cell related CM production and supply chains. Additionally, the BIL provisions on Critical Materials Innovation, Efficiencies, and Alternatives and the Supply Chain Research Facility will be used to enable a Critical Materials Consortium (CMC) to generate the applied RD&D for all energy-related critical materials, especially ones that are not covered in the provisions described above.

5. Hydrogen

Across the nation, there is strong demand for alternative energy options, which will help to reduce emissions and create more jobs. Increasing hydrogen production can help meet that demand. DOE has an important role in developing the hydrogen economy, particularly with Congress providing \$8 billion through the Infrastructure Investment and Jobs Act for DOE to develop Regional Clean Hydrogen Hubs. The development of these regional hydrogen hubs will be essential to ensure America is a global leader for the hydrogen economy.

Question: How is the Department approaching its role in a future hydrogen economy and how can that be supported on a regional basis, particularly with programs like the Hydrogen Hubs?

Answer: DOE's Hydrogen Program is focused on research, development, and demonstration activities to enable low-cost and at-scale clean hydrogen to unlock opportunities across multiple sectors in the economy. Specifically, with respect to the regional clean hydrogen hubs, DOE is fostering the co-location of supply and demand on a regional basis to demonstrate hydrogen's value proposition.

The hubs will help identify where there is clean hydrogen supply and end users close by, thus lowering infrastructure costs. Building these hubs on a large scale will also bring down costs by leveraging existing infrastructure that could be used for new hydrogen markets, such as trucks, energy storage, steel manufacturing, and existing pipelines.

Question: Can you provide a status update on the Department's implementation of the hydrogen provisions included in the Infrastructure Investment and Jobs Act, particularly of the Regional Clean Hydrogen Hubs?

Answer: The Department of Energy (DOE) has taken several steps to kickstart work to implement the Regional Clean Hydrogen Hubs (H2 Hubs) provision under the Bipartisan Infrastructure Law (BIL), including:

- A [Notice of Intent](#) (June 2022) which provides a high-level draft plan for DOE's current vision to meet the BIL requirements for the H2 Hubs.
- A [DOE update](#) during the Hydrogen Program's Annual Merit Review (June 2022) on planned activities around the regional clean hydrogen hubs.
- A [Request for Information \(RFI\)](#) (Feb. 2022) to collect input from stakeholders and help guide future planning to develop the regional clean hydrogen hubs program.
- The launch of the [H2 Matchmaker](#) online resource (Feb. 2022) to assist hydrogen suppliers and users with self-identifying collaborators and opportunities to expand development toward realizing regional hydrogen hubs.
- Various public informational webinars ([Dec. 2021](#) and [Feb. 2022](#)) and listening sessions with a diverse range of stakeholders, including regional leaders, local groups, and environmental justice community members, among others.

DOE anticipates issuing a H2 Hubs funding opportunity later this year^[1].

^[1] [Overview of DOE Requests for Information Supporting Hydrogen BIL Provisions, and Environmental Justice Priorities | Department of Energy](#)

6. Manufacturing and Industrial Sector

Developing strategies for clean energy manufacturing and industrial decarbonization should rebuild robust domestic manufacturing while not leaving regions or communities behind. This will build a better America – including good-paying jobs.

Question: Given the challenges of reducing emissions from the industrial sector, can you discuss how addressing them can create economic and job benefits?

Answer: DOE's Advanced Manufacturing Office (AMO) supports the research, development, demonstration, and deployment (RDD&D) of emerging and transformative technologies to achieve net-zero greenhouse gas (GHG) emissions in the industrial sector by 2050. AMO also supports RDD&D investments to advance materials, manufacturing processes, and energy technology manufacturing. All of these investments are needed to build a robust manufacturing sector to support good-paying jobs, a robust economy, and economy-wide decarbonization.

AMO industrial decarbonization investments include aggressive energy efficiency improvements; electrification of industrial processes; utilization of low carbon fuels, feedstocks, and energy sources; and integrating carbon capture and utilization into the industrial systems. Sector-specific approaches include innovative iron and steelmaking processes, efficiency improvements in chemical manufacturing, and advances in cement production. Crosscutting approaches include enhanced efficiency of process heating and drying operations. Implementing

these technologies may involve up-front costs to industries; however, longer-term energy savings and emissions reduction have the potential to produce a net economic benefit, such as an increased GDP, resulting from averted costs of climate damage, as well as the new jobs, industries, and technological innovations a decarbonized industrial sector is anticipated to bring.

AMO-advanced materials and manufacturing technology investments strengthen the manufacturing base so that it can ramp up its delivery of innovative clean energy technologies, while developing a diverse, skilled workforce. AMO pursues a broad array of advancements in manufacturing RD&D that can advance technologies that are crucial for economy-wide decarbonization such as energy storage systems and wide bandgap semiconductors. Innovations in manufacturing of advanced composites support blades for next generation wind turbines, including those offshore. Materials for harsh service conditions, including high heat environments, are needed for thermal storage and other applications. AMO also supports RD&D to build resilient, diverse, sustainable, and secure domestic critical mineral and materials supply chains that support the clean energy transition, including expanding and diversifying supply and developing substitutes. This includes work on neodymium magnets, which are needed for electric vehicle motors and wind turbine generators.

One example where an increase in the production and use of advanced manufacturing technologies can both help to reduce industrial sector energy use and emissions and contribute to economic competitiveness is smart manufacturing technologies and their implementation, which can create new job opportunities in computer-automated processes and energy information management systems. According to the 2018 McKinsey Report, “Decarbonization of industrial sectors: The next frontier,”^[1] industrial technologies account for approximately 25 percent of global GDP, which represents a significant opportunity for economic benefit with productivity gains. In addition, in a 2021 report^[2], the National Academies have estimated that decarbonization of the economy would create 1-2 million new jobs in the United States over the next 10 years. Scoping analysis performed as part of industrial decarbonization road mapping indicates approximately one-half a gigaton of CO₂ emissions reduction potential from the five most emissions-intensive industrial subsectors. The DOE is well positioned to have important conversations with those who receive our funding around creating high-quality jobs.

^[1] [Decarbonization of industrial sectors: The next frontier | Sustainability | McKinsey](#)

^[2] National Academies. “Accelerating Decarbonization in the United States: Technology, Policy, and Societal Dimensions”. 2021. <https://www.nationalacademies.org/our-work/accelerating-decarbonization-in-the-united-states-technology-policy-and-societal-dimensions>

Question: How should we approach the innovation process to ensure we get those benefits in every region so that no one is left behind?

Answer: DOE’s strategy for manufacturing and industrial innovation focuses on building up regional innovation ecosystems across the United States and encouraging diversity, equity, and inclusion. Addressing environmental justice and energy equity is integral to ensuring the benefits of innovation leave no one left behind. The Biden Administration’s Justice40 Initiative pledges that at least 40% of the overall benefits from certain Federal investments in climate change, clean energy, and energy efficiency flow to disadvantaged communities.^[1] These benefits can come, for example, in the form of more affordable clean electric power and energy efficient homes with

lower electric bills, from a reduced potential for climate related disasters (fires, tornadoes, floods, etc.) disrupting communities and families, from pollution reductions that will improve air, water, and soil quality in communities near industrial facilities and from participation in economic opportunities created by the clean energy transition.

To ensure DOE's Office of Energy Efficiency and Renewable Energy (EERE) innovation support is serving marginalized communities, EERE Technology Offices now require a Diversity, Equity, and Inclusion Plan as part of applications to funding opportunities. EERE also recently announced the awarding of 18 organizations nationwide through its Phase 1 of the Inclusive Energy Innovation prize, which awarded \$200,000 to community organizations to foster grassroots innovation, community-centric networks, and ground-up solutions to accelerate climate and clean energy technology advancement within disadvantaged communities. Phase Two of the Inclusive Energy Innovation Prize is anticipated to close in May 2023. Up to six teams will receive awards from a prize pool of \$1.5 million based on their performance in this second phase. EERE's Advanced Manufacturing Office (AMO) will also support analysis of the environmental justice impacts of past and future investments.

In addition, DOE's regional assistance programs like the Industrial Assessment Centers (IACs) and the combined heat and power (CHP) Technical Assistance Partnerships (TAPs) focus their services on specific regions and target specific community's needs. These programs can be utilized and potentially expanded to encourage manufacturers in all regions to increase their adoption of emissions reduction technologies. Workforce development programs centered on job creation can also be distributed around the country to ensure that no regions are left behind.

DOE's Energy Program for Innovation Clusters (EPIC) Prize recognizes the nation's most innovative incubators. Sponsored by the Office of Technology Transitions (OTT), the EPIC Prize awards cash prizes to regional incubator teams that submit the most creative and impactful plans, then implement those plans to develop strong clusters, connections, and support for energy startups and incubators. The prize seeks to address a capital gap in supporting these organizations, in order to support the broader regional innovation and entrepreneurial ecosystem.

^[1] DOE Announces More Than 140 Programs Supporting President Biden's Justice40 Initiative, <https://www.energy.gov/articles/doe-announces-more-140-programs-supporting-president-bidens-justice40-initiative#:~:text=WASHINGTON%2C%20D.C.%20%E2%80%94%20The%20U.S.%20Department,water%2C%20and%20other%20investments%20to>

7. Agricultural Controlled Environments

Question: Where at the Department is research occurring in conjunction with USDA on eliminating greenhouse gases from controlled environmental agriculture structures that produce food? Who is conducting this research? Lastly, has there been any progress on developing a production chamber that is energy/water/nutrient efficient, recycles plant material, and is affordable?

Answer: The DOE Lighting R&D Program has worked with researchers from the USDA Agricultural Research Service (ARS) to conduct R&D to coordinate activities related to using energy efficient lighting for food production. The respective teams have held several meetings to coordinate efforts among ARS, the USDA Office of Chief Scientist, and scientists supported by

DOE. A recent DOE Lighting R&D Program report, Energy Savings Potential of SSL in Agricultural Applications^[1], is a follow-on report to the 2017 report, Energy Savings Potential of SSL in Horticultural Applications. The 2020 report shows that lighting for indoor horticulture—which comprises buildings with non-stacked indoor farming, vertical farming, and greenhouses with supplemental lighting—used 9.6 TWh of energy in 2019. A technical potential “All LED” scenario could reduce lighting energy consumption for horticultural applications by 34%.

In addition, the DOE Lighting R&D Program has partially supported two USDA-DOE papers concerning using LEDs for food production and the efficacy limits of LEDs used for horticulture: LEDs for Photons, Physiology and Food, published in *Nature* by authors funded by DOE, USDA, and NASA; and From Physics to Fixtures to Food: Current and Potential LED Efficacy, published in *Horticultural Research* by authors funded by DOE, USDA, and NASA. The most recent version of DOE’s 2022 Lighting Research and Development Opportunities (RDO) report includes lighting agricultural applications as part of the Crosscutting R&D Opportunities for Lighting Technology section. These sections and the resulting opportunities were informed by engagement with ARS scientists.

^[1] <https://www.energy.gov/sites/default/files/2020/07/f76/ssl-agriculture-jun2020.pdf>

Question: In addition, regarding the interagency working group established with USDA as required by the Agriculture Improvement Act of 2018, please describe what has been put in place to implement it? What steps have been taken? What further clarifications are the Departments working through? How is the interagency collaboration taking place and where?

Answer: DOE and USDA have a strong basis for collaboration on Energy-Water Nexus activities to advance mutual interests, such as understanding impacts of climate change on water availability and quality for agriculture and energy; modernizing and decarbonizing irrigation systems; recovering fertilizers, developing biopower, and recovering other products from agricultural wastewater; and promoting energy, water, and agricultural equity across all communities. The DOE National Laboratories also bring world-leading technical expertise to these efforts. At the same time, USDA has extensive subject matter expertise, financing programs designed for deployment, local channels to reach farmers and rural communities across the U.S., and an understanding the needs of those and other stakeholders. The information provided below provides a description of two interagency collaborations with USDA.

First, DOE EERE and USDA-RD have established a DOE/USDA interagency working group to document an Action Plan to further the Memorandum of Understanding between the USDA and DOE relative to cooperation and coordination on improving energy development in rural America. The Action Plan, which is under development, focuses on the five major areas outlined in the 2019 MOU regarding energy and manufacturing. The Action Plan will also include the Administration’s priorities on decarbonization and supporting rural underserved communities.

Second, there is additional engagement with USDA through a collaborating group that is led out of EERE called the Nexus of Energy and Water (NEWS) that is coordinating interagency activities across ten agencies including DOE, DOI, USDA, EPA, and others. This was established under Section 1010 of the Energy Act of 2020, “Energy and Water for

Sustainability”. DOE and DOI are working to establish the joint Nexus of Energy and Water Sustainability RD&D (NEWS RD&D) Office, and the group has established the NEWS RD&D Interagency Coordination Committee (NEWS ICC). The primary activity of the NEWS ICC has been to create a forum and develop common Federal goals and plans around NEWS RD&D that ultimately will be documented and issued. The NEWS ICC serves as a convening focal point for coordination of capabilities, methodologies, and data/modeling and dissemination amongst the various Federal agencies.

In March, 2022, the ICC initiated bi-weekly information exchanges to discuss opportunities for leveraging various programs at all levels. Recently, the ICC held a virtual internal workshop to discuss the various agencies’ NEWS related priorities and current RD&D activities, as well as to identify where there are associated overlaps, connections and gaps. The ICC discussed the potential future state of the energy water nexus in ten years. The outcome of the workshop is to begin to identify a common set of initial goals and objectives that align with the priorities of the various federal agencies.

Congressman Reschenthaler

8. Microreactor Demonstration Projects

As you know, microreactors have the potential to generate reliable energy for areas facing unique energy challenges, including remote communities and military bases.

Question: How does the FY23 budget request support the development of microreactors? Does the department have plans for microreactor demonstration projects?

Answer: The DOE Office of Nuclear Energy (NE) fiscal year (FY) 2023 budget request supports many activities to enable and accelerate the development and future demonstration of microreactor technologies. NE's Microreactor Research Program (MRP) is funded through the Advanced Reactor Technologies sub-program. The MRP supports cross-cutting research and development and maturation of innovative components to address the highest priority technical challenges hindering the demonstration of microreactor concepts. A key focus of the FY 2023 budget request is testing not involving nuclear materials to demonstrate various microreactor components, as well as semi-autonomous control. Additionally, NE is working to establish the Microreactor Applications, Research, Validation and Evaluation (MARVEL) nuclear test bed. MARVEL will serve as a unique nuclear test platform to demonstrate microreactor operations and end-use applications. The FY 2023 budget request supports construction of the MARVEL test platform to enable operation at the Idaho National Laboratory (INL).

To support advanced reactor vendors in developing their designs and preparing for future demonstration opportunities, NE's National Reactor Innovation Center (NRIC) is establishing test beds for testing advanced reactor designs. The Demonstration and Operation of Microreactor Experiments (DOME) test bed will be capable of siting experiments to support microreactor technologies.

Additionally, through the Advanced Reactor Demonstration Program (ARDP) Risk Reduction pathway, NE is supporting two microreactor projects aimed at reducing risk and technical uncertainty for these designs. The Westinghouse Electric Company (WEC) project will advance the design of a heat pipe-cooled microreactor while the BWXT Advanced Technologies project will mature a commercially viable high temperature gas-cooled microreactor conceptual design. These projects will prepare the WEC and BWXT designs for future demonstration opportunities. The FY 2023 budget request continues support for all the Risk Reduction projects, including the WEC and BWXT Advanced Technologies projects.

The FY 2023 budget request includes a proposed new initiative to support modern nuclear research infrastructure at United States (U.S.) universities to help align university capabilities with the advanced reactor innovations being developed by U.S. industry. We anticipate that such an initiative might result in a proposal for at least one new U.S. university research reactor, which might be a microreactor.

In addition, NE has been supporting the Department of Defense (DoD) since 2018 to support DoD's development of microreactor technologies. DoD plans to demonstrate a mobile microreactor at the INL by the mid-2020's. NE has and continues to provide DoD with

programmatic and technical expertise (fully funded by DoD) to evaluate industry designs and coordinate on synergistic activities such as development of high-assay low-enriched uranium (HALEU) supply chains.

WEDNESDAY, MAY 11, 2022.

**NATIONAL NUCLEAR SECURITY ADMINISTRATION AND
ENVIRONMENTAL MANAGEMENT**

WITNESSES

HON. MARVIN ADAMS, DEPUTY ADMINISTRATOR FOR DEFENSE PROGRAMS, NATIONAL NUCLEAR SECURITY ADMINISTRATION, U.S. DEPARTMENT OF ENERGY

ADMIRAL JAMES "FRANK" CALDWELL, DEPUTY ADMINISTRATOR FOR NAVAL REACTORS, NATIONAL NUCLEAR SECURITY ADMINISTRATION, U.S. DEPARTMENT OF ENERGY

HON. COREY HINDERSTEIN, DEPUTY ADMINISTRATOR FOR DEFENSE NUCLEAR NONPROLIFERATION, NATIONAL NUCLEAR SECURITY ADMINISTRATION, U.S. DEPARTMENT OF ENERGY

HON. JILL HRUBY, UNDER SECRETARY FOR NUCLEAR SECURITY AND ADMINISTRATOR, NATIONAL NUCLEAR SECURITY ADMINISTRATION, U.S. DEPARTMENT OF ENERGY

WILLIAM "IKE" WHITE, SENIOR ADVISOR, OFFICE OF ENVIRONMENTAL MANAGEMENT, U.S. DEPARTMENT OF ENERGY

Ms. KAPTUR. I will now call the hearing on the Department of Energy fiscal year 2023 budget request for the National Nuclear Security Administration and the Office of Environmental Management to order.

I am glad everyone has their candy so we can get started here.

This is a hybrid hearing, so we need to address a few housekeeping matters.

For the members joining virtually, once you start speaking, there is a slight delay before you are displayed on the main screen. Speaking into the microphone activates the camera displaying the speaker on the main screen. Do not stop your remarks at that point if you do not immediately see the screen switch. If the screen does not change after several seconds, please make sure you are not muted.

To minimize background noise and ensure the correct speaker is being displayed, we ask that you remain on mute until you have sought recognition. And, to eliminate inadvertent background noise, I or staff that I designate may mute participants' microphones when they are not recognized.

Members are responsible for muting and unmuting themselves. If you are appearing virtually and I notice, when you are recognized, you have not unmuted yourself, I will ask the staff to send you a request to unmute yourself. Please then accept that request so that you are no longer muted.

In terms of the speaking order, we will begin with the chair and ranking member, who are already here. Then members present at the time the hearing is called to order will be recognized in order of seniority, followed by members not present at the time the hearing is called to order.

Finally, House rules require me to remind you that we have set up an email address to which members can send anything they wish to submit in writing at any of our hearings. That email address has been provided in advance to your staffs.

I now recognize myself for my opening statement on the fiscal year 2023 budget request for the National Nuclear Security Administration and the Office of Environmental Management.

Thank you to our witnesses for joining us today as we discuss the work of the National Nuclear Security Administration and the Office of Environmental Management.

Let me apologize in advance that we are expecting votes shortly, but we will get through as much as we can now.

Every day, NNSA professionals undertake the serious work of reducing the threat of nuclear proliferation and nuclear terrorism and sustaining and modernizing our Nation's stockpile of nuclear weapons, the most lethal, capable, and sophisticated arsenal in the world.

Additionally, NNSA plays a vital role empowering the U.S. Navy's aircraft carriers and submarines, the fiercest fleet on the open seas.

Effective management of America's nuclear deterrent is both a national and global imperative. This is clearer now than ever before by Russia's unprovoked war on Ukraine. Vladimir Putin's tyranny, horrific, scorched-earth war and nuclear saber rattling will go down in history as a reckless, desperate, and tragic war crime against millions of innocent people. America must invest in the safe, reliable nuclear deterrent that serves as liberty's shield.

As part of our approach, we must modernize our nuclear deterrent in a manner that is realistic, economical, and risk informed. NNSA's weapons activities budget has increased \$3.5 billion, 28 percent, since the fiscal year of 2020. But NNSA continues to run over budget and behind schedule on its nuclear warhead life extension programs.

Now, NNSA and DOD say they will not meet pit production schedules. Frankly, this is really unacceptable. America simply cannot afford to get this wrong. I venture to say that every member of this subcommittee is committed to working with you to achieve a balanced, prioritized NNSA workload that meets America's national security needs.

Turning to nuclear nonproliferation, the furtherance of worldwide safety and security directly depends on NNSA's work. Therefore, Putin's deranged aggression underscores this point unambiguously. And, therefore, I was disappointed to see a flat funding level proposed in the budget. NNSA should expand its work in arms control and counterproliferation to ensure that America's nuclear diplomacy is ready for the developing challenges ahead.

Now I will turn to the Office of Environmental Management, which holds a significant responsibility to address and remedy the legacy effects on the environment that stem from five decades of nuclear weapons production and government-sponsored nuclear energy research. Environmental management cleans up some of the most radioactive sites around the world.

Given how important these clean-up programs are to the well-being of so many people, including thousands in my own home

State of Ohio, I was discouraged by the funding reduction proposed in the budget. We have an obligation to deliver progress for the people of these communities and for the future of our Nation. We must not accept anything short of full and lasting remediation.

With that, I will close my remarks.

[The information follows:]



Chairwoman Marcy Kaptur
Subcommittee on Energy and Water Development
FY 2023 Budget Request for the National Nuclear Security
Administration and DOE Office of Environmental Management
Opening Statement As Prepared
May 11, 2022

Thank you to our witnesses for joining us today as we discuss the work of the National Nuclear Security Administration and the Office of Environmental Management.

The NNSA preserves America's national security by advancing the nuclear science that assures vigorous nuclear deterrence. Every day, NNSA professionals undertake the serious work of reducing the threat of nuclear proliferation and nuclear terrorism, and sustaining and modernizing the nation's stockpile of nuclear weapons – the most lethal, capable, and sophisticated arsenal in the world. Additionally, NNSA plays a vital role in powering the U.S. Navy's aircraft carriers and submarines – the fiercest fleet on the open seas.

Effective management of America's nuclear deterrent is both a national and global imperative. This is clearer now than ever before by Russia's unprovoked war against Ukraine. Vladimir Putin's tyranny and nuclear saber rattling will go down in history as a reckless, desperate, tragic war crime against millions of innocent people. Without a shadow of a doubt, freedom has real enemies in this modern era. America must invest in the safe, reliable nuclear deterrent that serves as Liberty's shield.

As part of our approach, we must modernize our nuclear deterrent in a manner that is realistic, economical, and risk-informed. As in past years, I am concerned this budget is based on overly optimistic assumptions.

NNSA's Weapons Activities budget has increased \$3.5 billion – 28 percent – since FY 2020. This increase was based in part on the need to modernize production capabilities and begin full-scale manufacturing of plutonium pits. But NNSA continues to run over budget and behind schedule on its nuclear warhead life extension programs. Now NNSA and DOD say they will not meet pit production schedules. In March, the head of U.S. Strategic Command stated that even with unlimited funding, the pit production schedule would not be met. It is apparent, then, that the question is not one of funding, but rather capacity.

America simply cannot afford to get this wrong. I venture to say that every Member of this subcommittee is committed to working with you to achieve a balanced, prioritized NNSA workload that meets America's national security needs.

Turning to nuclear nonproliferation, the furtherance of worldwide safety and security directly depends on NNSA's work. Putin's deranged aggression underscores this point unambiguously. Therefore, I was disappointed to see a flat funding level proposed in the budget. Humanity faces



a growing and alarming threat from the development of nuclear weapons. America must double down on arms control – not plateau. As part of our objective, we must also intensify efforts to prevent dangerous material and sensitive technologies from falling into the wrong hands. NNSA should expand its work in all these areas to ensure that America’s nuclear diplomacy is ready for the challenges ahead.

Now, I will turn to the Office of Environmental Management (EM), which holds the significant responsibility of addressing and remedying the legacy effects on the environment that stem from five decades of nuclear weapons production and government-sponsored nuclear energy research. EM cleans up some of the most radioactive sites around the world. This work is both complex and dangerous – but it ensures communities across the country have safe and clean air, water, and soil. In doing this work, it is essential that the skilled personnel who carry it out are protected from contamination and receive the sophisticated training they need.

Given how important these cleanup programs are to the well-being of so many people – including thousands in my home state of Ohio, I was discouraged by the funding reduction proposed in the budget. We have an obligation to deliver progress for the people of these communities and for the future of our nation. We must not accept anything short of full and lasting remediation.

With that, I’ll close my remarks. Thank you to all of you for your service to our nation and for being here today. We look forward to discussing this request.

I’d like to turn to our ranking member, Mr. Simpson, for his opening remarks.

Ms. Kaptur. Thank you to all of you for your service to our Nation and for being here today. We look forward to discussing this request, and I would like to turn to our ranking member, Mr. Simpson, for his opening remarks. And I thank him for always being on time and present.

Mr. SIMPSON. Thank you, Chairwoman Kaptur.

I will be very brief, but I ask unanimous consent to have my full statement included in the record.

Ms. KAPTUR. Without objection.

Mr. SIMPSON. I would like to welcome our witnesses, new and returning, to today's hearing. Your programs are critical to the safety and security of our country. I was disappointed to see the President's budget request once again proposes what is effectively a cut for Defense programs in light of high inflation rates.

To appropriately respond to evolving and emerging global threats, we must continue the modernization of the nuclear weapons stockpile and its supporting infrastructure. We also have a responsibility to clean up the sites of previous nuclear weapons development and production.

I look forward to discussion with the chair—with the witnesses to inform our work here on this committee.

Chairwoman Kaptur, I thank you for calling this hearing, and I yield back.

[The information follows:]

OPENING STATEMENT

The Honorable Mike Simpson
Ranking Member, Energy and Water Development Subcommittee
House Committee on Appropriations

Hearing on the Fiscal Year 2023 Budget Request for the
National Nuclear Security Administration and Office of
Environmental Management
May 11, 2022

Thank you, Chairwoman Kaptur. I'd like to welcome our witnesses to today's hearing. Some of you are appearing before us for the first time, and I look forward to hearing your views on your programs. Thank you all for being here.

Today's hearing is to discuss the fiscal year 2023 budget request for the National Nuclear Security Administration and the Office of Environmental Management. These programs form the bulk of the defense funding in the Energy and Water bill.

As I mentioned last week at our hearing with the Secretary, the President's request for defense programs is woefully inadequate to meet our national security needs. Considering today's runaway inflation, a 2 percent increase is effectively a cut. Current events have shown that now is not the time – if there ever is one – to reduce our focus on national security matters.

To appropriately respond to these evolving and emerging threats, we must continue the modernization of the stockpile and its supporting infrastructure. To do so requires re-establishment of many critical capabilities in an expeditious manner and continued efforts to make advancements through science and technology. These activities will require a full and capable workforce.

Unfortunately, the NNSA itself has reported to the Committee that the budget is \$500 million below the requirements-based budget submitted by DOE. And many of us here on the Hill view even that number as a bare minimum.

The federal government also has a responsibility to clean up five decades of nuclear weapons development and production. This work is the mission of DOE's Environmental Management program. Over the past decades, EM has made significant progress on cleaning up sites across the country, but there is a lot of work still to be done. Contrary to these needs, the EM budget request would cut cleanup activities at several sites.

I think I can safely say that Congress likely will make some changes to the budget request for these programs, as we have in previous years. I look forward to the discussion with the witnesses to inform our work here on the Committee.

Chairwoman Kaptur, thank you for calling this hearing, and I yield back.

Ms. KAPTUR. Thank you. Thank you.

Thank you, Mr. Simpson.

And we are pleased to have the witnesses with us today, but I believe that they are going to defer their opening statements.

Mr. SIMPSON. Defer until when?

Ms. KAPTUR. Until they place them in the record.

I remind all members and witnesses that the 5-minute clock still applies. And, if there is a technology issue, we will move to the next member as they ask their questions until the issue is resolved, and you will retain the balance of your time.

You will notice a clock, either on your screen, or in this room, that will show how much time is remaining. At 1 minute remaining, the Zoom clock will turn to yellow. At 30 seconds remaining, I will gently tap the gavel to remind members that their time is almost expired. And, when your time is expired, I will begin to recognize the next member.

In terms of the speaking order, we will generally follow the order, as we did in our first hearings, beginning with the chair and ranking member, and I will recognize members present at the time the hearing is called to order in order of seniority, and, finally, members arriving after gavel by order of arrival.

Additional rounds of questions may occur after all members have an opportunity for a first round.

We will now begin questioning under our normal rules.

I wanted to ask the—wait one second. Sorry.

I would like to begin with NNSA, if I could. First of all, welcome very much, Administrator Hruby. Glad to have you here today. And we know that NNSA is in the midst of an ambitious nuclear modernization program that has severely strained the nuclear weapons complex. Previous NNSA administrators and even the current head of STRATCOM have said that NNSA can only absorb so much work at one time.

I am concerned that NNSA is on an unstable path, an unsustainable one, driven by the Department of Defense's decision-makers that do not understand these limits.

What can NNSA do within the interagency process to rebalance risky nuclear modernization plans while meeting Defense needs?

Ms. HRUBY. Thank you, Chairwoman, for that question.

We do have a lot to do, and we are simultaneously executing five weapons modernization programs while rebuilding and recapitalizing the infrastructure of the NNSA.

We are working very closely with the DOD. I do think they understand our capacity limits. I don't think they like our capacity limits, but I do think there is a better and better understanding of the capacity limits of NNSA by the DOD. And we are beginning a process, working with our colleagues in DOD, to do risk-based prioritization that will, I think, be—give us a program where we are not looking at individual systems or individual budgets, but, instead, we are looking at the full range of things that the United States needs to be responsive to the geopolitical environment.

We are also very keen on establishing more resilience and more adaptability in our infrastructure so that, moving forward, there are more options.

But you are right; we are quite constrained, and I think that DOD understands that better every day.

Ms. KAPTUR. I raised an issue this morning at another Defense hearing having to do with naval resilience and the mismatch between what we need to do in our shipbuilding and the long waits as various ships come in for maintenance where the schedule keeps being missed. It's supposed to get done this year. Well, no, we'll drop it back another year.

And then, with what is happening with modernization of nuclear weapons, that doesn't necessarily mean it will coincide when the ship is done.

So it seems to me that there needs to be a much more robust discussion about how do you get both done on schedule? And what is—how can we accelerate this process in a way also that does not demoralize sailors and those who are in service to our country on these various ships?

Ms. HRUBY. We meet as a Nuclear Weapons Council every month, the executive committee. The working groups meet nearly every week. We are in constant communication of how to keep our weapons lined up with operating capability. So I think that that part of the synchronization is going well.

This is just work that the United States has not done for many years. In a nuclear weapons program, we built a lot of weapons. We counted on those weapons for decades, and now we are—need to do a modernization. Same thing on the DOD.

But I want to assure you that the relationship between the DOD and the NNSA and the synchronization of schedule is very tight.

Ms. KAPTUR. We would like further clarification for the record on that one. We are trying to move this hearing along too fast in my opinion because of what is going on down there, but I will give it over to our ranking member, Mr. Simpson, to ask his question. And then we will suspend the hearing until we finish votes, and we will come back.

And we apologize to all of you.

Mr. SIMPSON. Do we know how long votes are going to be? How many votes are there?

Ms. HERRERA BEUTLER. There is 25.

Ms. KAPTUR. What?

Mr. SIMPSON. Yeah.

Ms. HERRERA BEUTLER. Yeah.

Mr. SIMPSON. That is what I was going to say.

Ms. HERRERA BEUTLER. Can we breeze through just one? Does that make sense?

Mr. SIMPSON. What's that?

Ms. HERRERA BEUTLER. The questions?

Mr. SIMPSON. Let me ask a question, and then we will talk about it.

Admiral Caldwell, your budget request for fiscal year 2023 includes an increase for the naval reactors development, your main research and development programs.

Could you explain—please explain the highlight what—and highlight what you view as the key areas of this program, including any impacts if these areas aren't addressed in a timely manner?

Admiral CALDWELL. Yes, sir. Thanks for the question, and thanks for the enduring support of my programs. The support of this committee allows me to deliver what the Navy needs.

The naval reactors development portion of my budget funds the scientists, technologists, and engineers at my Department of Energy sites, and also funds the vital equipment that I need to be able to solve current fleet problems and to prepare for future fleet issues and designs.

It allows me to fund things like models, methods, and materials. It allows me to do the design work that I need to do. It allows me to solve current fleet problems. And it also funds the advanced test reactor work that we do to develop the materials we need for our reactor cores.

In all, I have asked for an increase in the budget for naval reactors development because I need to invest in those game-changing technologies that are going to sustain our advantage in the maritime domain. I have mapped out my strategy in a secret-level document. We have shared that with your staffs. I welcome the chance to share that with the members of the committee.

And we are investing in five key areas: One, building advanced cores; two, building reactor plant components using modern methods of manufacturing to try and do that more affordably, to make the components more capable, and also to make them more reliable, and to build—reduce the span.

I am investing in advanced instrumentation and control, and I have some aggressive targets to improve cost performance, schedule performance, as well as reliability.

I am investing in data analytics and sensors to allow me to monitor the performance of my equipment throughout life and improve performance.

And, finally, I am investing in game-changing technologies that we can bring to bare.

In all, sir, this is vitally important to us. Over a decade ago, we made some decisions to invest in three priority projects—the Columbia design, the spent-fuel handling facility, as well as refueling the reactor in New York. Now it is time to invest in R&D.

I have got a good plan, and I appreciate your support that will allow me to deliver what the Navy needs.

Thank you.

Mr. SIMPSON. What about your personnel?

Admiral CALDWELL. My personnel? That is covered under a part of my budget called program direction. I am asking for a small increase there so that I can hire to my fully authorized FTE. I am not able to do that currently because of the growth in Federal budgets.

I have a small, high-performing, lean workforce of Federal employees. Those people are my game changers. They are the ones who make everything happen in my program.

And, if you think about it today, we have a lot going on. We are building submarines at a rate we haven't seen in decades. We are building carriers at a rate we haven't seen in decades. And I need to attract and retain and get the longevity from those folks to do everything I need to do.

We are also continuing to support the U.K. and their programs, which we have done for many years. And we are now starting to support Australia in answer to the President's task under AUKUS.

So essentially my small workforce is supporting not only my program, but the U.K. program and the Australian program, and your support here would be greatly appreciated.

Thank you, sir.

Mr. SIMPSON. Thank you. I yield.

Ms. KAPTUR. Thank you, Ranking Member Simpson.

I am going to make a command and control decision here and— with the concurrence of the ranking member, that we reschedule this hearing. I just consider this hearing too important to be interrupted by whatever they are doing down there with 25 votes. And you are more important to the country than that circus down there right now.

So, if it is all right, we will work with the staffs, and we will set up another hearing that will be more convenient to the members.

If there is no objection, I would like to move that.

Mr. CALVERT. No objection.

Mr. SIMPSON. Yeah. I have got no objection.

Ms. KAPTUR. Thank you.

Mr. SIMPSON. And however we have to arrange it. If it has to be a virtual hearing or whatever.

Ms. KAPTUR. However.

Mr. SIMPSON. The questions that we have are important and what you do is very important, so—

Ms. KAPTUR. It sure is, and we respect it, and we value it, and we need to hear from you, especially now.

Thank you so very much, and I thank the membership.

Thank you, Ranking Member Simpson. The meeting is adjourned.

[The following statements, questions, and answers were submitted for the record:]

Statement of Admiral James F. Caldwell
Deputy Administrator for Naval Reactors
National Nuclear Security Administration
U.S. Department of Energy
on the
Fiscal Year 2023 President's Budget Request
Before the
House Committee on Appropriations
Subcommittee on Energy and Water Development, and Related Agencies

May 11, 2022

Chairwoman Kaptur, Ranking Member Simpson, and distinguished members of the subcommittee, thank you for the opportunity to appear before you today and present the President's Fiscal Year (FY) 2023 budget for Naval Reactors. Your strong support for the work we do ensures our nuclear Navy can carry out vital missions around the world with agility, endurance, and firepower. As underscored by the unprecedented events currently playing out on the world stage, great power competition is here to stay, therefore it is vital for the United States that we maintain a robust naval advantage over our adversaries. Congress' support of our past efforts has allowed the Navy to maintain these advantages, and your partnership with the Navy is needed now, more than ever, as we work on the current and future endeavors in naval nuclear propulsion that are needed to protect the national security of the United States.

I have had the pleasure of serving as the Director of Naval Reactors for almost seven years out of an eight-year tenure. Before that, I had the privilege of serving in many operational and staff roles throughout the course of my Navy career. As I reflect on these decades of service and our Navy's global standing, I am increasingly concerned that our competitive advantages over our near-peer rivals are diminishing. It is vitally important for us to focus on technology investment now; failure to do so could have catastrophic implications for our future Navy in a future fight. Rivals are pursuing military modernization programs aimed at achieving regional hegemony in the near-term and eroding United States preeminence in the long-term. All domains of the maritime environment are becoming increasingly contested, and to preserve freedom of the seas, deter conflict, defend allies, and protect our national interests, we must sustain and grow our naval warfighting capabilities at an accelerated pace.

As amplified in our latest National Defense Strategy, we cannot simply do more of what we've done in the past. New advancements and refinements in nuclear propulsion are needed as the Navy innovates to increase and expand our competitive advantage. Naval Reactors' historical investment in advanced technologies has given the nation an enviable position in the maritime environment; further investments, however, are necessary to maintain our technological edge well into the future. Our ships need to retain their advantage against future threats across multiple domains and must be affordable. We also need to be able to design and build our propulsion plants faster to ensure the Navy stays ahead of increasing demands, and we must do this more cost effectively. As the CNO has conveyed in his Navigation Plan, "there is no time to waste – our actions in this decade will set the maritime balance of power for the rest of the century." Our nation took a new step this past year when the President announced the AUKUS

enhanced tri-lateral security partnership, directing a period of consultation with the objective of identifying the optimal pathway for delivering a conventionally-armed, nuclear-powered submarine capability to Australia by the earliest achievable date. This partnership creates an opportunity to amplify our naval power, strengthen a key ally and our own shipbuilding capability, and build the additional industrial and vendor base capacity our Nation needs. Through the consultation period, Naval Reactors is also focused on strengthening our partnership with the United Kingdom, and ensuring Australia understands and establishes the strong foundation of capabilities necessary to properly steward nuclear submarine technology. Given the global threats we face, it is imperative that we ensure our closest allies remain relevant in the undersea domain.

Our success in the future will rest on the foundation of what we build today. Therefore, I want to highlight some of the many contributions of our nuclear fleet. Our ballistic missile submarines provide the most survivable leg of our nuclear triad and are essential to our ability to deter major warfare, and provide assurance to our allies. Our fast attack submarines operate with confidence, undetected, safeguarding vital commercial sea-lanes, and stand ready to protect American interests where needed. Our aircraft carriers provide our nation a credible, sustained ability to project combat power, deter conflict, and protect our interests around the world.

Lead ship construction for COLUMBIA Class is underway, which will allow the Navy to continue the seamless execution of the sea-based strategic deterrent mission that began over six decades ago. The USS OHIO (SSBN 726), lead ship of today's ballistic missile submarine fleet was commissioned over 40 years ago. This class will start to be replaced by the COLUMBIA Class in 2031 with lead boat delivery in FY 2028. I remain focused on ensuring the transition between these two classes is uninterrupted – the sea based strategic deterrence mission is too important to fail. The COLUMBIA Class will be a bedrock of our national security posture for decades to come and will be the first submarine to operate for over 40 years on a single reactor core, an incredible testimonial to the technology investment that has occurred over the past decades.

In attack submarine shipbuilding, the Navy continues to work toward a steady cadence of VIRGINIA Class submarine delivery. I recently took part in sea trials on Pre-Commissioning Units (PCU) MONTANA and OREGON. This submarine class now makes up over one third of our operational attack submarines. The Navy is also assessing improvements to capability and lethality for future VIRGINIA Class submarines; these improvements will not only add capability to today's fleet but allow the Navy to prove candidate technologies that will influence our next-generation attack submarine. Naval Reactors is closely aligned with the Navy on all of these efforts. Along with the technologies being inserted for VIRGINIA Class submarines, Naval Reactors has renewed our focus and investment in advanced technologies which will pave the way for improvements in speed, energy density, and stealth for the follow on SSN(X) program. We are also focused on refueling up to seven LOS ANGELES Class submarines, helping to maintain our submarine force structure with boats that have the warfighting capability to contribute effectively to undersea missions.

In aircraft carrier shipbuilding, USS GERALD R. FORD (CVN 78) continues to make great progress and will soon be employed and operating alongside U.S. and allied forces. This

phenomenal ship is ready to provide over a half century of naval presence around the globe. This past year marked a significant event in the employment of the FORD Class - Full Ship Shock Trials. The positive result of this testing is a tribute to the precision, rigor, and execution that go into the design, production, and delivery of the world's most capable aircraft carrier. The second ship of the FORD Class, the JOHN F. KENNEDY (CVN 79) continues propulsion plant testing and is on track for delivery to the Navy in 2024. Progress also continues on construction of ENTERPRISE (CVN 80) and DORIS MILLER (CVN 81), carriers in a two-ship buy that allows the Navy to realize important cost savings, while maintaining a steady, predictable workload within our vital industrial base.

Naval Reactors Overview

This committee's support has enabled the safe operation of the nuclear fleet, substantial progress on our key projects, and our continued oversight and regulation of all areas across the Naval Nuclear Propulsion Program. Naval Reactors' budget request for FY 2023 is \$2.1 billion. Your past support has allowed significant progress on our three major Department of Energy funded projects – COLUMBIA Class propulsion plant development and production, the refueling overhaul of our research and training reactor in New York, and the construction of the Naval Spent Fuel Handling Facility in Idaho. When I first arrived at Naval Reactors in 2015, these three projects had not yet hit their peak funding. Over the course of the past several years, these projects have been a major focus for the Naval Nuclear Propulsion Program. We have managed and lead the way through many challenges, and today, I can confidently say that the development and production of the first COLUMBIA Class propulsion plant is proceeding in support of lead boat construction; and the refueling of our research and training reactor will complete within FY 2023. With your support, the Program also continues to make significant progress on construction of an incredibly important Naval Spent Fuel Handling Facility. While we are staying focused on completing these efforts, we are also preparing for the future with renewed emphasis on advanced and innovative technologies.

Major Projects

COLUMBIA Class Propulsion Plant

The COLUMBIA Class ballistic missile submarine remains the Navy's number one acquisition priority. Naval Reactors is supporting lead ship construction and is delivering the life-of-ship reactor core and the electric drive propulsion system for the COLUMBIA Class program. The FY 2023 budget includes \$53.9 million that will allow continued support for lead ship propulsion plant design and safety analysis work required for lead ship reactor testing and delivery.

S8G Prototype Refueling Overhaul

The FY 2023 budget request includes \$20 million toward final execution of the refueling and overhaul of the New York land-based prototype, which will enable an additional 20 years of Naval Reactors' commitment to research, development, and initial operator training. Over the course of the past three years, the project has worked through performance and testing equipment challenges, and in April of last year met a key milestone - installation of the new reactor core.

This reactor core, called the Technology Demonstration Core, includes COLUMBIA Class type fuel modules as part of testing and demonstrating the manufacturability necessary for production and delivery of the COLUMBIA Class reactor core. We continue to provide strong oversight to improve cost and schedule performance, and the project will complete in FY 2023. I look forward to providing the final update on this multi-year project in next year's appearance before the Committee.

Spent Fuel Handling Recapitalization Project

Naval Reactors is constructing the Naval Spent Fuel Handling Facility (SFHP), located at the Naval Reactors Facility in Idaho. The facility is critical to our mission to manage naval spent nuclear fuel and support aircraft carrier and submarine fleet requirements. The FY 2023 budget request includes \$398 million for continuation of this project through several key milestones. Economic conditions influenced by the COVID-19 pandemic and the discovery of unexpected bedrock conditions beneath the facility's foundations have presented significant challenges for us. To address these challenges, we evaluated actions necessary to ensure the overall Project milestones remain achievable, including additional resources (e.g., extended/added shifts, parallel and fast-tracking of work efforts) and additional funding to mitigate impacts to current and future construction subcontracts. Consistent with these actions, I approved a revision to the SFHP Performance Baseline in FY 2021. Funding in FY 2023 will be critical to implementing our construction sequence. I remain committed to keeping the committee informed of our progress, and actions to mitigate construction challenges, as we aggressively manage and oversee this complex and large-scale infrastructure project.

Technical Base Funding

In addition to our three priority projects, Naval Reactors maintains a high-performing technical base. The technical base is the set of fundamental skills and capabilities necessary to safely and effectively support the nuclear Navy. It includes a foundation of specialists in nuclear materials, nuclear physics, thermal-hydraulic testing, acoustics, electrical design, software development, system development, refueling, and other specialized skills, along with the associated facilities and laboratories to conduct our work. The people and activities that make up our technical base are leveraged for our priority projects but also perform essential work to support the operating fleet and ensure our day-to-day technological advantage over our competitors. Specifically, the technical base: 1) addresses emergent needs and challenges of our nuclear fleet, 2) executes nuclear reactor technology research and development that supports improving today's fleet and future capabilities, and 3) modernizes critical infrastructure and reduces the Program's legacy environmental liabilities. This base also supports the lean yet highly effective federal workforce that provides the oversight necessary to carry out this important technical work safely and efficiently. These activities provide 24-7 support to the globally deployed nuclear-powered Navy. Attracting and retaining top talent is critical to our technical base's ability to fulfill and mature our mission amidst a wide array of challenges and new demands in this era of strategic competition. The engineers and scientists at our Naval Nuclear Laboratory and nuclear capable shipyards are national treasures, who are in high demand from other areas of our economy. We continue to work with the leadership of our labs and private shipyards to identify innovative means to stay competitive in this aggressive talent market.

Program Direction

Our small but highly skilled federal workforce is critical to execution of our responsibilities. With the FY 2023 Program Direction request, I remain highly focused on attracting, developing, and retaining a talented and diverse workforce to oversee and manage a wide array of work across the Naval Nuclear Propulsion Program to ensure mission success. The talented and dedicated people at our Washington, DC headquarters and field offices are absolutely essential to our strong centralized management and oversight of the important work we perform for our Nation.

Building ships that have over forty years of expected life requires staffing continuity to ensure the Nation has a workforce with the deep technical knowledge needed to execute Naval Reactors' cradle-to-grave responsibilities of these robust systems. I must have sufficient Federal staffing to meet the demands of sustaining and improving today's fleet while simultaneously growing our future capabilities. The cumulative effect of personnel costs growing above inflationary rates and an increase in recent senior level retirements has impeded our ability to reach this goal and challenged our ability to maintain our staffing levels. The market for this talent is exceptionally competitive. Increasingly complex systems, new and innovative research efforts, and growing cyber and other vulnerabilities require additional expertise and new perspectives that can only be gained through reaching our full personnel requirements. I will continue to communicate with the committee on our requirements and progress in reaching our related staffing goals. In concert with our renewed focus on research and development that I have highlighted over the last several years, we need to find new ways to bring the nation's top talent into Naval Reactors and retain this talent to transition technical innovations into our submarines and aircraft carriers. I respectfully request Congress' support, which will allow me to recruit, select, develop, and retain the talented workforce that was started by Admiral Hyman Rickover many decades ago and that has proved to be crucial to the success of the Program.

Research and Development

Our research and development strategy represents a renewed investment in cutting-edge technologies aimed at reversing an eroding capability gap with strategic adversaries like China and Russia. Technology investment must be reinvigorated today to have new technologies ready for future classes of ships and to lower costs and reduce construction timelines. It should be noted that these investments also enhance and improve the performance of today's fleet; this is especially important given the increasing competition in the global maritime environment. Our critical research and development is conducted by the dedicated and talented teams of people at our Naval Nuclear Laboratory sites – the Bettis Atomic Power Laboratory in Pittsburgh, the Knolls Atomic Power Laboratory and Kesselring Site in greater Albany, and the Naval Reactors Facility in Idaho.

Our first priority is always support of today's fleet. Our labs perform approximately 4,000 technical evaluations annually that enable Naval Reactors to thoroughly assess and respond to emergent issues, thereby keeping our ships mission-ready while ensuring nuclear safety. These

efforts are essential to keep our ships at-sea operating abroad for longer periods of time, our carrier strike groups globally engaged, and ballistic missile and attack submarines ready to respond at any time.

Beginning with last year's FY 2022 budget, Naval Reactors has embarked on a path to identify and develop new technologies for inclusion in the next generation of nuclear powered ships while simultaneously delivering the enhanced capabilities to the existing fleet mentioned earlier. We are pursuing advanced reactor core and fuel systems, advanced manufacturing and inspection techniques, next-generation instrumentation and control architectures and sensors, and asymmetrical applications of emerging technologies (e.g., advanced power conversion, artificial intelligence, data analytics, additive manufacturing, and advanced robotics). These advancements have the potential to deliver both greater capability and lower acquisition and lifecycle costs, while ensuring the Navy is constantly improving our advantage and innovating. I commit to further engagement with the committee on these advanced technology maturation efforts to enhance understanding and support for the actions described above. I take great pride in highlighting our innovative and new technologies and how we can transition them into meeting requirements for the Fleet of tomorrow.

I want to assure the committee that our investments are supported by a comprehensive and rigorous planning effort we undertake with our partners at the Naval Nuclear Laboratory. Our annual work execution plans are derived from this comprehensive alignment, and I personally review and approve each plan to ensure we are making the right investments and tradeoffs in all areas of our business.

Facilities and Infrastructure

Our Naval Nuclear Laboratory facilities and infrastructure are essential in carrying out Naval Reactors' mission. This year's budget request supports continuing our recapitalization of Naval Nuclear Laboratory facilities and infrastructure systems, many of which have supported the Program since its inception over 70 years ago. Specifically, this budget includes a consolidation and recapitalization of our thermal hydraulic testing capabilities that will advance cutting-edge technologies and improve testing efficiency. Without these recapitalization efforts, we will be unable to effectively support nuclear fleet operations and advanced research and development efforts at the level required by this complex technology. We are ramping up our efforts in decontaminating and decommissioning (D&D) older facilities that have been in existence since the start of the Program in the early 1950s. We have approximately \$8 billion in environmental liabilities requiring D&D efforts. Over one-third of this estimate is associated with the cost to remediate and demolish inactive facilities and infrastructure at the Naval Nuclear Laboratory sites. We continue to retire these liabilities in an environmentally responsible and cost-effective manner to support best use of our funding. I look forward to future engagement with the committee to discuss our specific actions and tangible examples of Naval Reactors' long-term plan to reach our goals. Through our established partnership with the Department of Energy Office of Environmental Management (DOE-EM), we are leveraging their experience in efficient, safe, and cost-effective remediation of environmental liabilities across the complex. I am pleased with the collaboration on this effort with my partners in DOE-EM.

AUKUS

In September of last year, President Biden announced an enhanced trilateral security partnership between Australia, the United Kingdom, and the United States (AUKUS). The three governments are engaging in an 18-month consultation period to seek an optimal pathway for delivering a conventionally-armed, nuclear-powered submarine capability to Australia at the earliest achievable date. Naval Reactors is playing a key leadership role in developing this plan to ensure that our nation's preeminent expertise is applied to the nuclear-powered submarine initiative. We are now more than six months into this consultation period and are focused on ensuring Australia understands the full scope of capabilities necessary to design, build, operate, and maintain a nuclear navy, as well as properly dispose a nuclear powered ship at the end of service. This includes an in-depth analysis of the trilateral partners' existing regulatory frameworks, as well as the existing educational, industrial, and technical capabilities, and capacities needed to identify the optimal path forward. This effort involves emphasizing to Australia the key leadership roles, labor talent, and infrastructure investments they will need to contribute to bring this to reality. In February, I along with a team of subject matter experts from Naval Reactors and the United Kingdom traveled to Australia to assess their current capability. During this trip, I met with senior Australian government officials. As part of our discussions, we emphasized that obtaining a nuclear powered submarine capability is a long road which requires steadfast commitment to the highest levels of stewardship. While my number one priority is supporting our current and future nuclear fleet, the AUKUS efforts are being supported by a small cadre of experts who are responsible for ensuring the critical facets of this consultation are completed effectively. The foundation on which this effort is built is made up of our people, our technology, and the facilities that support our own Naval Nuclear Propulsion Program. While Australia is funding this consultation period, Congress' support of Naval Reactors' FY 2023 budget request is vital to support our primary mission and allow the Naval Reactors leadership team the ability to support key activities during the consultation period.

Conclusion

The Navy's ability to maintain mastery of the undersea domain and sustain a formidable forward presence and its resultant value cannot be simply assumed. Naval nuclear propulsion is an incredible but unforgiving technology, and must be treated appropriately, with a constant focus on safe operation. Naval Reactor's cradle-to-grave responsibility to manage this technology is paramount, and I assure this committee that I will balance investments in today's fleet with the requirements of a future fleet, carefully steer future cooperation efforts, and preserve the focus on providing effective naval nuclear propulsion for the United States Navy. I appreciate the strong support this program receives from Congress and respectfully urge your support for our FY 2023 budget request.

**Testimony Statement of
The Honorable Jill Hruby
Under Secretary for Nuclear Security
And Administrator of the
National Nuclear Security Administration
U.S. Department of Energy
Before the
House Appropriations Committee
Subcommittee on Energy and Water Development**

May 11, 2022

Chairwoman Kaptur, Ranking Member Simpson, and Members of the Subcommittee, thank you for the opportunity to present the President's Fiscal Year (FY) 2023 budget for the Department of Energy's (DOE) National Nuclear Security Administration (NNSA). NNSA greatly appreciates the Committee's bipartisan support for our nuclear security mission and for the talented and dedicated workforce responsible for carrying it out every day.

The Department meets its enduring national security mission by maintaining and modernizing the nuclear weapons stockpile so that it is always safe, secure, reliable, and effective; by reducing global nuclear threats; and by providing the U.S. Navy's nuclear-powered submarines and aircraft carriers with militarily effective propulsion systems. NNSA remains uniquely qualified to fulfill these tasks on behalf of the American people and in support of our allies and partners.

The NNSA FY 2023 budget request is informed by the 2022 Nuclear Posture Review and reflects today's increasingly complex geopolitical environment. Importantly, the budget request provides full support for the significant nuclear weapons design and production required to modernize all three legs of the nuclear triad. Once complete, this effort will provide the U.S. with a safer, more secure, and more reliable stockpile that, together with the Department of Defense (DoD) modernization programs, will provide the U.S. with a modern nuclear deterrent capable of responding to a wider array of challenges. The FY 2023 budget request also includes continued funding for the NNSA infrastructure revitalization program needed to produce the weapons and materials for the planned program of record and create an enterprise that is more resilient and flexible. Funding for research, technology, and engineering needed for stockpile certification and innovation activities is maintained in the request.

At the same time, the FY 2023 budget request recognizes we must press ahead with our nuclear nonproliferation and nuclear counterterrorism and counterproliferation efforts as a complementary approach to respond to geopolitical realities. These programs continue efforts to implement and support robust security and safeguards for nuclear materials; shift commercial, research, and medical industries away from highly radioactive materials and technologies; and develop technologies for early detection of proliferation activity. This request recognizes the increased efforts required as nuclear power expands around the world in response to climate

change, and as Russia, China, and North Korea continue to diversify and expand their nuclear arsenals.

The NNSA budget request provides the support needed for Naval Reactors to continue work designing, producing, operating, and maintaining the nuclear propulsion plants for U.S. nuclear submarines and aircraft carriers. The request also fully supports three critical initiatives: the COLUMBIA-class ballistic missile submarine reactor systems development; construction of the Naval Spent Fuel Handling Facility; and the refueling and overhaul of the land-based reactor for continued training and technology testing.

In today's multipolar and more aggressive geopolitical environment, it is imperative that NNSA is both responsive to needs and acts responsibly to avoid escalation or arms racing while preparing for an uncertain future. Our budget request reflects this balance, and our work has never been more critical to global stability.

NNSA's Accomplishments in 2021

Last year, NNSA achieved several key milestones across the nuclear security enterprise despite the unprecedented circumstances COVID-19 presented.

Life Extension and Weapons Modernization Programs: In 2021, NNSA completed first production units (FPU) for the W88 Alteration (Alt) 370 and the B61-12 Life Extension programs. Both refurbished weapons have increased safety and reliability.

Large Line-Item Construction:

NNSA has three large line-item construction projects for nuclear materials underway: two projects associated with plutonium pit production – one at Los Alamos National Laboratory and one at the Savannah River Site – and one project associated with uranium processing at the Y-12 National Security Complex.

The Los Alamos Plutonium Pit Production Project (LAP4) received Critical Decision (CD)-1 approval in April 2021. The Savannah River Plutonium Processing Facility (SRPPF) received CD-1 approval in June 2021. CD-1 approval marks completion of a project's definition phase and the conceptual design as part of DOE's Order 413.3B process for the acquisition of capital assets. Clearing the CD-1 process allows NNSA to establish 90 percent design and associated cost estimation during the subsequent CD-2 effort.

The Uranium Processing Facility (UPF), consisting of seven subprojects, has completed three projects on schedule and under budget and the final four are underway. During 2021, significant construction activity continued and led to the successful full enclosure of all buildings in April 2022, setting the stage for equipment installation.

National Ignition Facility (NIF): In August, the National Ignition Facility at Lawrence Livermore National Laboratory achieved a breakthrough with an experiment that yielded more than 1.3 megajoules of energy and resulted in a burning plasma state for the first time in any

fusion research facility. Burning plasma research is needed for high fidelity modeling of nuclear weapons and is one of the milestones needed to achieve self-sustaining energy production.

Secure Transportation: The Office of Secure Transportation accomplished 100 percent of its assigned missions safely and securely with no mission degradation despite operational challenges present from COVID-19.

Infrastructure Innovation: NNSA purchased the LeMond Carbon Facility in Oak Ridge, TN to replace facilities at Y-12 built in the 1940s used for process development. Use of NNSA's purchase authority for acquisitions allows us to accelerate delivery of modern facilities without the need for new construction.

To support our climate goals, NNSA placed lease orders with the General Services Administration to replace gas-powered cars with approximately 50 zero-emissions vehicles, nearly doubling the size of electric-powered cars in NNSA's fleet.

Nuclear Material Disposal and Reduction: NNSA converted an additional 91 kilograms of plutonium to an oxide form, for a cumulative total of 1,187 kilograms, in preparation for final disposition, continued downblending excess plutonium, and completed construction of a characterization and storage pad for the first shipment of downblended plutonium from the Savannah River Site to the Waste Isolation Pilot Plant. Additionally, the Secretaries of Energy and Health and Humans Services jointly certified that global supplies of molybdenum-99 (Mo-99) produced without the use of highly enriched uranium (HEU) can meet the needs of patients in the U.S. This critical milestone in nonproliferation efforts also triggered a congressionally mandated ban on exports of HEU for foreign medical isotope production.

Global Material Security: NNSA conducted over 75 cyber engagements with international partners to enhance security of nuclear facilities and materials. Partnerships were also started with several domestic advanced reactor vendors for 'security-by-design' activities to enhance the security of the systems for both domestic and international use. NNSA replaced 50 devices (39 domestically and 11 internationally) that use high-activity radioactive sources with non-radioisotopic alternative technologies and secured 48 buildings (28 domestically and 20 internationally) with high priority radioactive sources. In addition, since the start of 2021, NNSA has signed new counter radioactive material smuggling arrangements with Estonia's Ministry of Interior, Ukraine's Ministry of Internal Affairs, Ukraine's State Security Service, Mexico's National Commission for Nuclear Security and Safeguards, Niger's High Atomic Energy Authority, and Morocco's Gendarmerie.

Counterterrorism: NNSA's Nuclear Emergency Support Team (NEST) conducted dozens of operations, including preventative radiological/nuclear detection support to the Presidential Inauguration, Presidential Address to a Joint Session of Congress, New Year's Eve celebrations in Las Vegas and New York City, Super Bowl LV, the Fourth of July celebration on the National Mall, and the 76th Session of the United Nations General Assembly. Additionally, NNSA conducted 50 virtual workshops with U.S. public information officers, law enforcement, first responders, and technical experts concerning radiological counterterrorism to build capacity and improve crisis and risk communication.

Workforce Development: NNSA achieved its highest federal workforce level since 2013 with a total of 1,825 federal employees onboard. To help develop the next-generation workforce, NNSA awarded 13 Minority Serving Institution Partnership Program grants for a total of 24 consortia grants to reach tens of thousands of students in STEM disciplines.

NNSA's FY 2023 Budget Request

The President's FY 2023 budget request for NNSA is \$21.4 billion, an increase of \$1.0 billion, or 5.1 percent, over the FY 2022 enacted level. Funding levels do not reflect the mandated transfer of \$92.75 million in FY 2022 to the Office of Nuclear Energy for operation of the Advanced Test Reactor. This funding request reflects the expanded mission in NNSA and the need for accelerated delivery of the modernization and infrastructure programs. The three NNSA missions – the nuclear deterrent, nuclear security and nonproliferation, and naval nuclear propulsion – have key deliverables in FY 2023. In addition, the capabilities to position NNSA to be successful in the future must be nurtured. We are grateful for the sustained, bipartisan commitment by Congress and multiple administrations and ask for continued support.

Weapons Activities Appropriation

The FY 2023 budget request for the *Weapons Activities* account is \$16.5 billion, an increase of \$566 million, or 3.7 percent over the FY 2022 enacted levels. The request will be supplemented with prior year balances of \$396 million. This budget request represents the Administration's continued strong commitment to a safe, secure, reliable, and effective nuclear deterrent backed by resilient, flexible infrastructure along with cutting edge science, cyber security, and physical protection.

NNSA is fully aware that delivering the deterrent and capabilities our nation needs to respond to the current environment requires a faster pace and a more complete modernization of weapons than over the last several decades. That is why we are re-establishing production capabilities lost in the 1990s and overhauling both our physical infrastructure and human capital to retain technical advantages and build resilience into our enterprise. NNSA is looking forward to overcoming obstacles and building on the successes of the previous year.

The FY 2023 request reflects the need to advance the weapons modernization programs and production capacity at an accelerated pace. The Weapons Activities account includes:

- **Stockpile Management:** Maintenance and modernization of nuclear weapons and production operations to sustain confidence in the safety, security, reliability, and military effectiveness of the stockpile without resuming nuclear explosive testing and associated activities.
- **Production and Infrastructure Modernization:** Investment in NNSA's infrastructure to rebuild capabilities lost in the 1990s and revitalize and expand the capacity of other elements to support stockpile modernization and science. These projects range from significant line-item construction for Plutonium and Uranium related activities to minor construction of offices and light labs to operational infrastructure such as electrical and networking utilities.

- Stockpile Research, Technology, and Engineering: Continued development of state-of-the-art scientific, engineering, and manufacturing capabilities to enable continuous improvement in design, certification, and production of the enduring nuclear weapons stockpile and to stay ahead of the threat.
- Transportation, Nuclear, and Cyber Security: Keeping pace with evolving threats and sustaining transportation, cyber and physical security across the nuclear security enterprise to improve resilience.

NNSA restructured the Weapons Activities budget in FY 2021 to enable better alignment of portfolios with resources. This allowed improved prioritization within portfolios that have multiple programs and interdependencies. Further refinements are proposed in FY 2023 to align programmatic construction with the portfolio each project supports. Comparisons throughout the Weapons Activities portfolio assume this alignment in the FY 2022 enacted levels as well.

Stockpile Management

The FY23 Stockpile Management budget request is \$4.9 billion, an increase of \$291 million, or 6.3 percent, over the FY 2022 enacted level. This portfolio covers the maintenance of a safe, secure, reliable, and militarily effective nuclear weapons stockpile. Activities include life extension programs (LEP) and other weapons modernization activities; surveillance, minor alterations, and limited life component exchanges; providing the safe dismantlement of nuclear weapons and components; and providing sustainment of needed manufacturing capabilities and capacities. The FY 2023 request also includes funding for Nuclear Enterprise Assurance (NEA) to prevent, detect, and mitigate subversion risks to the nuclear weapons stockpile and associated design, production, and testing capabilities.

W88 Alteration (Alt) 370: NNSA expects the W88 Alt 370 program to enter Phase 6.6, *Full-Scale Production*, in July 2022. Production is currently on schedule to meet DoD deployment schedules.

B61-12 LEP: NNSA expects the B61-12 LEP to enter Phase 6.6, *Full-Scale Production*, in June 2022. The B61-12 LEP consolidates multiple variants of the B61 gravity bomb and improves the safety and security of the weapon. Production is currently on schedule to meet DoD deployment schedules.

W80-4 LEP: NNSA is continuing Phase 6.3 activities, *Development Engineering*, and plans to enter Phase 6.4, *Production Engineering*, in FY 2023. The W80-4 FPU date is currently being re-evaluated due to COVID-19 impacts, slower than planned hiring and increased attrition, and component technical challenges. The updated FPU schedule will be developed by mid-2022. NNSA's revised schedule is expected to support the U.S. Air Force's (USAF) schedule for Long Range Standoff missile initial operating capability.

W87-1 Modification Program: The W87-1 will replace the aging W78 warhead using a modification of the existing W87-0 design. The W87-1 will deploy new technologies that improve safety and security, address obsolete designs and materials, and simplify warhead manufacturability. The FY 2023 budget request supports NNSA's commitment for a planned

FPU in FY 2030 to meet DoD's scheduled deployment of the Sentinel missile. The request supports Phase 6.3, *Development Engineering*, activities including joint testing with USAF Sentinel missile and Mk21A reentry vehicle program and conducting the Conceptual Design Review. NNSA plans to enter Phase 6.3 in FY 2022.

W93/Mk7: In February 2022, the NWC voted to authorize the W93's entry into Phase 2, *Feasibility Study and Design Options*. NNSA's FY 2023 funding request will support the Phase 2 activities including further examination of design concepts from Phase 1, and down-selection to desired weapon design(s) to be subsequently developed in Phase 2A, *Design Definition and Cost Study*, planned for FY 2026. All the W93's key nuclear components will be based on currently deployed and previously tested nuclear designs, as well as extensive stockpile component and materials experience. It will not require additional nuclear explosive testing to certify. The W93 is vital for continuing our longstanding cooperation with the UK, which is modernizing its nuclear forces. The U.S.'s W93 program is a separate but parallel program critical to the UK's replacement warhead (RW) for its submarine launched ballistic missile. As an allied but independent nuclear power that contributes to NATO's nuclear deterrent posture, the UK's nuclear deterrent is critical to U.S. national security.

Within Stockpile Management, the FY 2023 budget request includes \$1.3 billion for *Stockpile Sustainment*, an increase of \$141 million, or 11.9 percent above the FY 2022 enacted level. This program is responsible for producing and replacing limited-life components such as neutron generators and gas transfer systems; conducting maintenance, surveillance, and evaluations to assess weapon reliability and detect any potential concerns; and analyzing information compiled during the annual assessment process.

The request for Stockpile Management also includes \$631 million for *Production Operations*, an increase of \$62 million, or 10.9 percent, above the FY 2022 enacted level. Included in this request is funding to support continued growth of base capabilities, both in staffing and equipment, required to support increased LEP workload as certain programs reach full-scale production rates.

Production Modernization

The FY 2023 Production Modernization budget request is \$4.64 billion, an increase of \$484 million, or 11.6 percent, over the FY 2022 enacted level. This funding focuses on production capabilities for nuclear weapons components including primaries, canned subassemblies, radiation cases and non-nuclear components needed to sustain the nuclear weapons stockpile near-to long-term.

Primary Capability Modernization: NNSA's most intensive recapitalization effort is reconstitution of plutonium pit production fabrication capabilities. NNSA is required to produce no fewer than 80 pits per year (ppy) during 2030. NNSA has outlined a two-site approach for producing 80 ppy utilizing Los Alamos National Laboratory (LANL) to produce 30 ppy and the Savannah River Site (SRS) to produce 50 ppy. The two-site approach will provide the required capacity while enhancing resiliency and flexibility. At this time, the production of 30 ppy at LANL during 2026 remains on schedule with some technical challenges remaining. However,

the production of 50 ppy at SRS during 2030 is not achievable. The Secretary of Energy and the Nuclear Weapons Council have both notified Congress regarding the inability to produce 80 ppy in 2030. However, NNSA remains committed to achieving 80 ppy as close to 2030 as possible. The FY 2023 budget request funds pit production and associated efforts with a 26 percent increase compared to FY 2022. NNSA continues to work with DoD to develop a plan to maintain the required stockpile until pit production capabilities are fully established.

The FY 2023 request for LANL Plutonium Modernization will support equipment installation, continue decontamination and demolition work, and mature project design for the LAP4. This includes adding equipment in Plutonium Facility 4 (PF-4) to support 30 ppy in 2026, construction of a training facility to support workforce development, and construction of a higher capacity entrance control facility.

The FY 2023 funds for SRPPF will be used to continue the CD-2 work to establish a 90 percent design. CD-2 is forecast for completion in early FY 2024. Additionally, the request supports early site preparation including removal of unnecessary walls and building systems originally installed for the Mixed Oxide Fuel Fabrication Facility.

Secondary Capability Modernization: NNSA is also modernizing its uranium, lithium, and tritium processing efforts necessary to fabricate nuclear weapon secondaries. NNSA's uranium strategy aims to relocate enriched uranium processing capabilities into the UPF and other enduring facilities to reduce mission dependency on Building 9212, which is over 75 years old. This will be accomplished by completing construction of UPF to provide new floor space for high hazard operations; extending the operational lifetime of buildings 9215, 9204-2E, and 9995 into the 2040s; introducing new processes to increase safety and efficiency in the new facilities; and supplying the current stockpile with purified enriched uranium metal.

UPF will provide for the long-term viability, safety, and security of enriched uranium processing capability in the United States while significantly improving worker and public safety. The construction is well underway with a peak production workforce of 3,000 people in FYs 2022 and 2023. Ongoing supply chain issues and delays associated with the COVID-19 pandemic are projected to result in a delay of about 8 months beyond the scheduled completion date of December 2025. A comprehensive annual cost update is being conducted for the UPF project completion to better understand factors that could potentially affect total costs. Overall, UPF is 70 percent complete with the first three non-nuclear infrastructure subprojects completed under budget and on schedule.

Additionally, in FY 2021, NNSA initiated the Depleted Uranium (DU) Modernization Program to meet growing mission requirements. This effort will reconstitute lapsed DU alloying and component manufacturing capabilities at Y-12; invest in key new technologies to improve efficiency and reduce lifecycle costs; and increase the reliability and capacity. The DU Modernization Program request for FY 2023 is \$170 million.

The U.S. no longer maintains a full lithium purification capability and relies on direct recycling as the main source of lithium for nuclear weapons systems. NNSA's Lithium Strategy will increase the supply of lithium by recycling components from dismantled systems, sustain and

recapitalize existing infrastructure through a transition period, and design and construct a Lithium Processing Facility (LPF) to house processing capabilities by 2031. LPF will replace capabilities performed in Y-12's buildings 9204-2 and 9202 and will include recovery, purification, and component fabrication operations. While current capabilities can provide a sufficient lithium supply through 2035, operations take place in an aging facility with significant infrastructure challenges. LPF will alleviate those issues and reduce risk while providing capacity to meet material demands beyond 2035.

The FY 2023 budget request for the Tritium and Domestic Uranium Enrichment is \$580 million, an increase of \$64 million, or 12.4 percent above the FY 2022 enacted level. For Domestic Uranium Enrichment the FY 2023 budget request supports HEU down-blending to extend the need date for low-enriched uranium (LEU) for tritium production to 2044, enrichment technology development, and acquisition activities to meet future enriched uranium needs. HEU downblending began in FY 2019 and will continue through FY 2025. NNSA is currently conducting an analysis of alternatives, which is expected to conclude in the mid-2020s that will inform a final down-select of an enrichment options. Other NNSA programs such as reactor fuel and naval propulsion fuel are also supported by this effort.

The Tritium Modernization Program's mission is to establish and operate a domestic source of tritium to meet national security requirements, which includes recycling tritium gas to maintain required inventories and sustaining reliable supply chain infrastructure and equipment. Since 2003, NNSA's tritium production has met all production, delivery, and schedule requirements. Because NNSA is currently ramping up production levels at the Tennessee Valley Authority to meet future delivery requirements, the requested budget has been increased. NNSA is also in the early phases of constructing the Tritium Finishing Facility (TFF), which will replace a 1950s-era facility. TFF will house the finishing, packing, and shipping of gas reservoirs to meet mission requirements. This major infrastructure modernization initiative will fulfill a critical mission need and enable the program to meet contemporary safety standards. The facility will house functions to receive, inspect, finish, package, and ship reservoirs. Construction of the site preparation subproject is scheduled to start in FY 2024.

Non-Nuclear Component Modernization: Non-nuclear components (NNCs) include a wide array of parts that weaponize the nuclear explosive package. Examples are gas transfer systems, neutron generators, microelectronics, and power sources. NNCs make up more than half the cost of weapon modernization due to the number, complexity, and their qualification in extreme environments over the warhead lifecycle. Therefore, delivering NNCs requires an extensive foundation of capabilities for the design, development, qualification, production, and surveillance of these components. The FY 2023 request includes funding to provide equipment for increased manufacturing capacity at the Kansas City National Security Campus; reconstitute thermal spray capability for weapon modernization; recapitalize radiation and major environmental test facilities at Sandia National Laboratories used to design and qualify NNCs; and tools and equipment at the Microsystems Engineering, Science and Applications (MESA) Complex at Sandia, which serves as the only approved source of trusted, strategically radiation hardened microelectronics.

Infrastructure and Operations

NNSA has been taking significant steps to modernize and recapitalize its infrastructure to meet expanding demands, reduce mission and safety risk, and draw down its deferred maintenance backlog. A well-organized, well-maintained, and modern infrastructure system is the bedrock of a flexible and resilient nuclear enterprise. Almost 60 percent of NNSA facilities were beyond their 40-year life expectancy at the end of FY 2021 with some dating back to the Manhattan Project. Our modernization and recapitalization efforts will provide for the safety of our workforce, the communities around our facilities, and our environment. NNSA can address this challenge only with sustained, predictable, and timely funding.

The FY 2023 budget request for Infrastructure and Operations is \$2.63 billion, an increase of \$144 million or 5.8 percent over the FY 2022 enacted amount. This increase will enable NNSA to build on the Infrastructure Modernization Initiative, including adopting new practices that will streamline construction practices to save time and money on low-risk, non-nuclear, construction projects.

Deferred maintenance has been a key focus of both NNSA and Congress. At the end of FY 2021, NNSA had \$6.1 billion of deferred maintenance and an enterprise-wide replacement plant value of \$121.5 billion. While this ratio may seem high, construction of new facilities and associated demolition of legacy facilities will have a substantial role in reducing NNSA infrastructure challenges. Approximately 90 percent of NNSA deferred maintenance is associated with facilities that are approaching or have surpassed their intended design life. NNSA is integrating its infrastructure modernization work with the Department's Office of Environmental Management supported effort to demolish high-risk excess facilities at the Y-12 National Security Complex, Lawrence Livermore National Lab, and Los Alamos National Lab. NNSA is using this intentional approach to prioritize investments based on mission risk while underscoring the need for sustained commitment to move beyond legacy infrastructure. The FY 2023 budget request includes increases in *Mission Enabling Construction* accounts so that NNSA can address mission needs, achieve operational efficiencies, and reduce risks to safety, security, the environment, and program.

For years, NNSA has used a prioritization methodology for recapitalization investments that factors in sustainability and resilience along with safety and mission risk. In FY 2023, NNSA is increasing its emphasis on climate resiliency projects through the Energy Resilient Infrastructure and Climate Adaptation (ERICA) initiative. ERICA is part of NNSA's multifaceted approach to address climate adaptation and resilience using direct- and indirect-funded infrastructure programs and alternative financing. For example, the planned Building 848 Net Zero Energy Upgrade project at Sandia will move the facility to being 100 percent powered by on-site generated electricity while also improving its operations, indoor air quality, and thermal comfort.

NNSA uses data-driven, risk informed tools and initiatives to improve decision making, accelerate the delivery, and reduce the cost of commercial-like construction projects. For example, in FY 2019 NNSA established the Enhanced Minor Construction & Commercial Standards (EMC²) pilot, which is challenging the paradigm for how NNSA executes low-risk, non-complex construction projects to accelerate delivery and reduce costs. There are 10 projects

in the pilot, including the Lawrence Livermore National Laboratory's Emergency Operations Center (EOC) which is the first pilot project to be completed earlier this year. Using the EMC² approach, the Livermore EOC was completed 13 months after receiving full construction funding in January 2021. In the first four pilot projects currently underway, estimated cost savings range from approximately 12 to 31 percent. An additional six EMC² projects are projected to result in estimated cost savings of 17 to 38 percent.

Stockpile Research, Technology and Engineering

For Stockpile Research, Technology, and Engineering, the FY 2023 budget request is \$2.89 billion, a decrease of \$83 million, or 2.8 percent below the FY 2022 enacted level. The decrease results from the use of carryover balances to continue construction of the U1a Complex Enhancement Project at the Nevada National Security Site (NNSS). After adjusting for this reduction, the Stockpile Research, Technology, and Engineering request is stable from FY 2022 enacted.

This portfolio provides the scientific foundation for science-based stockpile activities, including the capabilities, tools, and components needed to assess the active stockpile and to certify warhead modernization programs without the need for underground nuclear testing. NNSA's unparalleled science and technical capabilities, and commitment to their constant improvement, helps cultivate the knowledge and expertise to maintain confidence in the stockpile. The major activities in the Stockpile Research, Technology, and Engineering portfolio are:

Enhanced Capabilities for Subcritical Experiments (ECSE): ECSE will produce experimental data in underground tunnels at the NNSS that will enable high fidelity assessment of the current stockpile and certification of the future stockpile without the need to return to underground nuclear-explosive testing. ECSE experiments are designed to remain subcritical throughout the experiment to adhere to the U.S. policy of "zero yield."

Stockpile Responsiveness Program (SRP): SRP is responsible for exercising and enhancing capabilities across the entire nuclear weapons development and production process to improve the responsiveness of the United States to future threats, technology trends, and international developments not addressed by existing life extension programs. For example, SRP is investing in efforts to address issues in design for manufacturability, digital engineering, component, and system prototyping and testing.

Inertial Confinement Fusion (ICF) Program: The ICF Program supports the assessment and certification of the nuclear weapon stockpile by providing the facilities, scientific expertise, and experimental capability necessary to acquire data at the extreme conditions of nuclear weapon operation. The ICF program also supports research on thermonuclear fusion with the goal of reaching fusion ignition and eventually high fusion yield in the laboratory. The FY 2023 request supports ICF research and facilities, enabling access to experimental data that underpin the safety, security, and effectiveness of the nuclear stockpile and continued progress toward the capabilities necessary to meet long-term stewardship needs.

NNSA Exascale Computing Initiative: The Exascale Computing Initiative (ECI) will provide NNSA with next-generation simulation capabilities to support weapons design, science-based stockpile stewardship, and stockpile certification activities. The FY 2023 budget request will continue funding maturation of next-generation simulation and computing technologies and enables NNSA to meet its exascale system initial operation capability in FY 2023, including transition of the next-generation, validated weapons codes to next-generation classified computing.

Academic Programs: The challenges of sustaining the nuclear deterrent long-term demand a strong and diverse base of national expertise and educational opportunities in specialized technical areas that uniquely contribute to stockpile stewardship. NNSA's Academic Programs are designed to cultivate, attract, and retain such a workforce. Funding in this area supports the Administration's Executive Order on Advancing Racial Equity and Support for Underserved Communities through the federal government, Academic Alliances and existing partnerships with Minority Serving Institutions, and an increase in student engagement and internship opportunities.

Secure Transportation Asset

Secure Transportation Asset (STA) supports the safe, secure transport of the Nation's nuclear weapons, weapon components, and special nuclear material throughout the nuclear security enterprise to meet nuclear security requirements. Nuclear weapon life extension programs, limited-life component exchanges, surveillance, dismantlement, nonproliferation activities, and experimental programs rely on STA to ensure safe, secure, and on-schedule transport. The FY 2023 budget request for STA is \$344 million, an increase of \$13.7 million, or 4.1 percent, above the FY 2022 enacted amount to increase the Federal Agent workforce to a level necessary to keep pace with the growing program deliverables.

The Office of Secure Transportation's (OST) priorities for FY 2023 include modernization and sustainment of transportation assets. This includes the Safeguards Transporter (SGT) life extension program to secure its service until replacement by the Mobile Guardian Transporter (MGT), as well as the entry into service of procured 737-700 aircraft. The first MGT Production Unit is planned for completion in FY 2026 and initial rate production is set to commence in FY 2027. Currently, aircraft are undergoing heavy maintenance checks, painting to NNSA standards, and a major modification from a passenger jet to a FlexCombi that is configurable to carry various loads of personnel and cargo.

OST also remains focused on recruiting, stabilizing, training, and retaining the Federal Agent and staff workforce necessary to support mission requirements. OST has committed to a stable human resources strategy to achieve an optimal agent force. OST has increased staffing numbers by optimizing position qualifications and managing risk associated with the Human Reliability Program. Although COVID-19 impacted key milestones and deliverables, OST successfully accomplished every assigned mission for the previous year.

Defense Nuclear Security

Defense Nuclear Security's FY 2023 budget request is \$882.3 million, an increase of \$38.2 million, or 4.5 percent over the FY 2022 enacted level. The Office of Defense Nuclear Security's (DNS) primary mission is protecting the facilities, people, and assets critical to achieving NNSA's important national security missions. The need for increasing security due to growth across enterprise from projects such as LAP4 and UPF, along with additional resources required to sustain core security, has resulted in increased program requirements for DNS. Support for the request is vital for the protection of the enterprise, its people, and its sensitive material and information. DNS remains focused on improving physical security infrastructure with several new projects and the development and deployment of new systems. Progress is also being made in countering unmanned aircraft systems. The first such platform was deployed at LANL in December 2017. Deployment at other facilities is expected to be completed in late FY 2022.

Cybersecurity and Emerging Issues

The FY 2023 budget request for information technology and cybersecurity is \$445.7 million, \$39.1 million, or 9.6 percent, over the FY 2022 enacted amount. This request funds ongoing operations and invests in improvements across NNSA to modernize both classified and unclassified systems, improves information management and data governance, implements critical aspects of a zero-trust architecture in our networks and systems, and allows for the execution of a robust cybersecurity program. As an example, NNSA recently recapitalized its deployed cyber sensor platform, significantly improving the ability to detect and respond to malicious activity.

Maintaining a strong cybersecurity program is a critical defense mechanism and a powerful deterrence tool. To strengthen oversight of the cyber program, the budget request includes a recategorization of certain Cybersecurity program investments into the Information Technology program. As a result, the request more clearly reflects investments in cybersecurity tools and services provided to the enterprise, maintains core cyber operations at the labs, plants, and sites, and improves management and transparency of these funds.

NNSA also recently completed an enterprise-wide cybersecurity assessment, in conjunction with the Institute for Defense Analyses, aimed at evaluating the overall cybersecurity posture and developing a set of recommendations to improve the program. That review calls for increased investment in information technology and cyber infrastructure to better meet current and emerging challenges, as well as outlines strategies related to workforce development issues. NNSA has already started acting on the findings and will continue to do so with the FY 2023 requested budget.

Defense Nuclear Nonproliferation Appropriation

The FY 2023 budget request for the Defense Nuclear Nonproliferation account is \$2.3 billion, an increase of \$274 million, or 13.2 percent, over the FY 2022 enacted level. When the use of prior year balances is considered, the proposed funding level for the account increases by \$397 million, or 19.2 percent. The use of prior year balances will allow DNN programs to supplement new budget authority across its programs.

This account funds all activities in the offices of Defense Nuclear Nonproliferation, Emergency Operations, and Counterterrorism and Counterproliferation. Within these offices, this appropriation funds six nonproliferation programs, a counterterrorism and counterproliferation program, and an incident response program as part of a whole-of-government approach. Together these efforts provide policy and technical leadership to prevent or limit the spread of weapons of mass destruction (WMD) and the related materials, technology, and expertise as well as to detect and respond to nuclear terrorism or proliferation events.

Nonproliferation Efforts

For decades, Defense Nuclear Nonproliferation (DNN) has developed and implemented policy and technical solutions to eliminate proliferation sensitive material and limit or prevent the spread of materials, technology, and expertise necessary for nuclear and radiological weapons. By working with governments, international organizations, and private sector partners around the world these efforts reduce the reliance on radioactive material in commercial and research industries; better secure nuclear and radioactive material; develop capabilities to interdict material outside of regulatory control; and maintain a robust response capability for nuclear and radiological incidents at home and abroad.

The FY 2023 budget request will allow the Office of Defense Nuclear Nonproliferation to better confront current and anticipated proliferation challenges including the growing nuclear programs and strategic competition with Russia and China, the impacts of Russia's full-scale invasion of Ukraine, risks related to the North Korean and Iranian nuclear programs, and disruptive technologies that lower the barrier to proliferation. Through these efforts DNN aims to restore American leadership in nonproliferation solutions and cutting-edge technology required to address future threats.

The *Material Management and Minimization (M3)* program FY 2023 budget request is \$451 million, an increase of \$108 million, or 31.5 percent, over the FY 2022 enacted level. M3 programs reduce and, when possible, eliminate weapons-usable nuclear material around the world. The FY 2023 budget request supports the conversion or shutdown of research reactors and isotope production facilities that use HEU, the use of non-HEU-based Mo-99 production, the removal and disposal of weapons-usable nuclear material, and the removal of plutonium from the state of South Carolina. Additionally, to date, nearly 7,270 kilograms of weapons-usable nuclear material from 48 countries and Taiwan have been removed or confirmed disposed, while 108 civilian research reactors and isotope production facilities have stopped using weapons-grade material in their work.

The *Global Material Security* program FY 2023 budget request is \$504 million, a decrease of \$27.4 million, or 5.1 percent, below the FY 2022 enacted level. The FY 2023 request supports program efforts to prevent terrorists and other actors from obtaining nuclear and radioactive material for use in an improvised nuclear device by working with domestic and global partners. This includes improving the security of vulnerable materials and sites, promoting the adoption of alternative technologies that do not rely on radioactive sources, and increasing capacity to detect, disrupt and interdict illicit trafficking operations. Working through the RadSecure 100 Initiative,

NNSA will accelerate and expand permanent risk reduction, security enhancements, and response integration with local law enforcement in the top 100 major metropolitan areas of the United States. To date, NNSA has replaced approximately 130 cesium-137 based blood irradiators with alternative technologies. The program remains on track to replace nearly all the estimated 400 such devices in the United States by 2027 as mandated in the FY 2019 NDAA. In addition, NNSA is partnering with domestic advanced nuclear reactor vendors in 'security-by-design' activities to enhance the security of their systems for domestic and international use. Finally, NNSA continues to build additional partnerships with bilateral and multilateral partners focused on counter nuclear smuggling. To date, NNSA partners with 84 countries in this area and continues to expand cooperation with existing and new partners to expand global counter nuclear smuggling capabilities.

The *Nonproliferation and Arms Control (NPAC)* program FY 2023 budget request is \$208 million, an increase of \$23 million, or 12.4 percent, above the FY 2022 enacted level. The increased funding request supports two increasingly important activities: (1) policy and technology development activities for peaceful uses of nuclear energy along with support for the International Atomic Energy Agency (IAEA), and (2) policy and technology development for potential arms control agreements that extend to new types of strategic weapons as well as tactical nuclear weapons.

By focusing on ensuring the peaceful use of nuclear energy, NPAC programs strengthen nonproliferation regimes through the development and implementation of effective technologies and policies. This is especially important as nuclear energy programs expand internationally in response to clean energy implementation to address climate change. New nuclear safeguards and monitoring and verification technologies are needed to secure materials and to detect proliferation activities early. NPAC works to mature technologies and transfer them to the International Atomic Energy Agency (IAEA) and partner countries to implement. The US also supplies IAEA with U.S. subject matter experts, training, and equipment advice and procurement aid. In FY 2022 and FY 2023 NPAC is helping establish the nonproliferation enrichment testing and training platform. This platform will be turned over to the IAEA for commissioning and operation in FY 2024. On the policy side, NPAC supports the development and implementation of Section 123 agreements and the careful regulation of nuclear technology exports utilizing Part 810 Authorizations.

Approximately \$30 million funds increasing nuclear weapons verification activities. This will improve U.S. technical policy and readiness for future arms control agreements and associated verification technology. New investment in the Arms Control Advancement Initiative will strengthen NNSA's capacity to address future nuclear warhead monitoring and verification requirements through advanced technology development, robust modeling and measurements, and sustained expert engagement to maintain a pipeline of experts to help advance arms control objectives over time.

The *Defense Nuclear Nonproliferation Research and Development (DNN R&D)* program FY 2023 budget request is \$720 million, a decrease of \$9 million, or 1.2 percent, below the FY 2022

enacted level. DNN R&D is the key component for the innovation of United States' technical capabilities to detect nuclear detonations; foreign nuclear weapons programs' activities; and the presence, movement, or diversion of special nuclear materials. The program also sustains and develops foundational nonproliferation technical competencies that ensure the technical agility needed to support a broad spectrum of U.S. nonproliferation missions and anticipate threats. Consistent with the growing nonproliferation challenges, this funding request for DNN R&D programs will expand activities that advance the development of next-generation nuclear arms control monitoring and verification technology and expertise symbiotic with the NPAC efforts.

The *Nonproliferation Construction* program FY 2023 budget request is \$72 million, a decrease of \$84 million, or 54 percent, below the FY 2022 enacted level. This decrease is due to the awarding of the long-lead procurement contracts for gloveboxes, emergency generators and HEPA filters under CD-3A Phase 2 in FY 2022 and the expected FY 2023 completion of design work for the Surplus Plutonium Disposition (SPD) project required for CD-2/3, *Approval of Performance Baseline and Start of Construction*. The FY 2023 budget request supports the implementation of the dilute and dispose strategy, by continuing design for the SPD project. The SPD project will add additional glovebox capacity at the SRS to accelerate plutonium dilution and aid in the removal of plutonium from South Carolina.

NNSA is requesting the establishment of a *Bioassurance Program* in FY 2023. The budget request is \$20 million. As the COVID-19 pandemic has shown, the United States needs better capabilities to anticipate, respond to, and mitigate threats to the bioeconomy. NNSA proposes to establish a national security bioassurance program to perform activities to anticipate and detect threats and scale response solutions to support the security of the future bioeconomy and monitor and thwart malpractice in this area. This funding supports foundational work at DOE/NNSA laboratories including the anticipation of destabilizing threats through modeling, identifying threat signatures and developing detection technologies, and rapidly developing and validating safeguards and threat mitigation approaches. NNSA will integrate its high-security work with the Department's Office of Science supported "open" science work and other government agencies, providing the full spectrum of capabilities essential for a bioassurance program informed by national security expertise drawn from parallel and analogous work on nuclear threats, risks, export controls and licensing, nonproliferation, detection, and verification.

Nuclear Counterterrorism and Incident Response

The FY 2023 request for the *Nuclear Counterterrorism and Incident Response (NCTIR)* program is \$439 million, an increase of \$68 million, or 18.4 percent, over the FY 2022 enacted amount. The NCTIR program supports two subprograms: *Counterterrorism and Counterproliferation (CTCP)* and *Emergency Operations (EO)*.

CTCP is responsible for countering nuclear terrorism and nuclear proliferation, responding to nuclear incidents and accidents worldwide, advancing nuclear forensic capabilities, and building domestic and international partner capacity concerning emergency preparedness and response. CTCP's unique scientific and operational capabilities make it an integral part of the U.S. Government's layered defense against nuclear terrorism and nuclear proliferation.

CTCP manages the NEST, NNSA's multi-mission emergency response capability comprised of on-call technical specialists who are trained and equipped to respond to nuclear incidents and accidents worldwide. NEST's missions include both national security and public health and safety disciplines.

NNSA, in conjunction with the Federal Bureau of Investigation (FBI), supports regional counter-WMD teams in 14 major U.S. cities as part of the "Capability Forward" initiative. CTCP provides technology, equipment, and training in support of these teams to enhance regional capabilities to defeat nuclear and radiological devices, accelerating life-saving responses to a WMD event.

The FY 2023 budget request addresses critical shortfalls in CTCP's capabilities to execute DOE's Primary Mission Essential Function (PMEF)-2, *Respond to Nuclear Incidents*. In coordination with interagency efforts to identify and address WMD response gaps, increased funding addresses staffing needs, ensures operational integration and full-spectrum training and exercises in accordance with interagency objectives, and supports technology development and infrastructure requirements.

Additional programmatic funding will also invest in new incident response expertise and technology; continue NEST equipment recapitalization efforts with planned procurement for replacement of diagnostic equipment and detection systems required for the public health and safety, counter-WMD, and nuclear weapon accident response mission areas; and bolster CTCP efforts to counter nuclear proliferation through applied analysis, concept development, predictive modeling, and testing.

CTCP also contributes to the interagency National Technical Nuclear Forensics mission, a central pillar of the U.S. strategy to deter hostile states from providing nuclear material to terrorists. CTCP's FY 2023 budget request includes \$43 million for this effort, including training and exercises for responders; procurement, maintenance, logistics, and technical integration of equipment; readiness to deploy pre- and post-detonation response and device assessment teams; and laboratory analysis of nuclear or radiological material.

EO provides both the structure and processes to ensure a comprehensive and integrated approach to all-hazards emergency management, thus improving readiness and effectiveness of the DOE Emergency Management System on a programmatic and performance level regardless of the nature of the emergency impacting the DOE/NNSA enterprise or its equities anywhere in the world. The FY 2023 budget request supports Continuity of Operations, Continuity of Government, and Enduring Constitutional Government programs to advance the National Continuity Policy and ensure the continued performance and delivery of essential services under any circumstances. The FY 2023 budget request also provides for 24/7/365 Consolidated Emergency Operations Center communications and coordination support to the DOE/NNSA Emergency Management Enterprise and Departmental Senior Leadership. The request also includes funding for investments in communications equipment and classified communications system improvements to support emergency operations and continuity infrastructure improvements.

Naval Reactors Appropriation

Advancing Naval Nuclear Propulsion

With over 40 percent of the Navy's major combatants being nuclear-powered, this technology remains critical to our national security posture. It provides the nation's submarines and aircraft carriers with unmatched mobility, flexibility, responsiveness, and endurance. The ability to maintain robust fleet capabilities on long-term missions is essential for the security of global trade and the security of our allies. The Office of Naval Reactors is the foundation of this national achievement in global security. Cutting edge advancements across all aspects of the Naval Nuclear Propulsion Program, from reactor plant development and design to the disposition of spent fuel, gives the U.S. Navy a decisive edge in naval warfare and enhances the security and reliability of the sea-leg of our nuclear triad.

The FY 2023 budget request for *Naval Reactors* is \$2.08 billion, an increase of \$163 million, or 8.5 percent, above the FY 2022 enacted level. The funding does not reflect the mandated transfer of \$92.75 million in FY 2022 to the Office of Nuclear Energy for operation of the Advanced Test Reactor. The budget request supports the continued safe and reliable operation of the nuclear-powered fleet, and it supports investment in technology development to deliver improvements in propulsion plant performance, manufacturability, and affordability – for current and future warships. Funding also supports requirements for the office's three major projects: COLUMBIA-class ballistic missile submarine reactor systems development; construction of the Naval Spent Fuel Handling Facility in Idaho; and the refueling and overhaul of the S8G Prototype land-based reactor in New York for continued sailor training and technology testing.

Consistent, sustained funding is vital for the support of these projects and will allow Naval Reactors to meet current and future force needs. Close coordination with the Navy led to the start of construction of the COLUMBIA-class lead ship in FY 2021. The S8G Refueling Overhaul is expected to reach completion in FY 2023. The Spent Fuel Handling Recapitalization project at the Naval Reactors Facility in Idaho is making significant progress with an estimated completion in FY 2026.

AUKUS

On September 15, 2021, Australia, the UK, and the U.S. announced the creation of an enhanced trilateral security partnership (AUKUS), focused on peace and security in the Indo-Pacific region. The three governments are currently six months into an 18-month consultation period to establish the most efficient path forward for the delivery of a nuclear-powered, conventional, submarine capability to Australia as expeditiously as possible. As part of the international working group developing nonproliferation and safeguards aspects of the AUKUS program, NNSA will provide technical advice to the interagency and our AUKUS partners on the full suite of requirements that underpin nuclear stewardship to implement strong safeguards measures and achieve the AUKUS objectives.

This cooperation is fully consistent with our obligations under the Nuclear Nonproliferation Treaty (NPT). The NPT does not prohibit naval nuclear propulsion. In our role in this trilateral

partnership, we intend to implement the strongest possible nonproliferation standards to maintain the strength and integrity of the nuclear nonproliferation regime. Australia is not seeking, and the U.S. and UK are not and will not assist in any acquisition of nuclear weapons. Additionally, Australia has committed not to enrich uranium or reprocess spent fuel in the context of AUKUS.

Federal Salaries and Expenses Appropriation

The FY 2023 budget request for *Federal Salaries and Expenses* (FSE) is \$496 million, an increase of \$32 million, or 7 percent, above the FY 2022 enacted level. The increase in this account will support an additional 132 Federal Full-time Equivalents (FTE) above the FY 2022 enacted level, bringing the total to 1,958. FSE increases will also support increased space and occupancy needs, travel costs, support service contractors, training, and other related expenses.

The NNSA Federal workforce is critical to the success of the Nation's nuclear security enterprise. NNSA's expanding mission requirements and pressing modernization and recapitalization needs require recruiting, training, and retaining a skilled Federal workforce with the appropriate capabilities to meet mission requirements and deliver on our objectives. This workforce represents some of the top minds on nuclear issues, consisting of a diverse team of scientists, engineers, project and program managers, foreign affairs specialists, and support staff that perform program and project management and conduct appropriate oversight of national security missions. NNSA's Federal workforce is distributed across the enterprise and can be found in eight states and Washington, DC.

NNSA currently faces two significant hurdles in achieving full staffing: retirement and private sector competition. As of FY 2021 17.3 percent of NNSA FTE Federal staff are eligible to retire, a number that is expected to rise to 35.4 percent by FY 2027. Additionally, in FY 2021 the annual FSE attrition rate was 10.7 percent, higher than the average attrition rate of 8.9 percent over the past 13 years. NNSA also faces competition from the private sector for top talent in technical fields.

Combating these trends requires an aggressive, external hiring strategy. NNSA has utilized a renewed focus on virtual recruitment events that support hiring across the nuclear security enterprise in support of all program areas. In October 2021, NNSA initiated a pilot program for expedited hiring within 15 business days, from the time the program office selected a candidate to the time Human Resources provided an entry on duty date. NNSA is applying lessons learned from this pilot program to continue progress on a streamlined hiring effort. Finally, NNSA has expanded the effort to enlarge fellowship program candidate pools and employ available alternative hiring authorities to compress the hiring timeline for qualified candidates and increase the overall hiring rate.

NNSA's recruitment and hiring efforts will support mission and growth requirements and will continue to support the Administration's goals of promoting racial and economic equity as a way to foster scientific breakthroughs, research and development excellence, and enhanced national security.

Conclusion

NNSA's enduring responsibility is providing the United States with a nuclear weapons stockpile and naval nuclear propulsion systems that are the best in the world while simultaneously promoting nonproliferation and counterterrorism efforts to reduce overall nuclear risk. The President's FY 2023 budget, informed by the 2022 Nuclear Posture Review, supports our efforts to keep the nuclear deterrent and naval nuclear propulsion systems safe, secure, reliable, and militarily effective. Recognizing the increasingly volatile geopolitical environment, NNSA must also stay resolute in sustaining and evolving our nuclear security, non-proliferation, and counterterrorism efforts to help offset and stay ahead of nuclear risks.

NNSA has a unique responsibility to provide an effective nuclear deterrent in a timely manner to protect our Nation and our allies. The FY 2023 budget request funds the five life extension and modernization programs that support all three legs of the triad. In FY 2023 the requested budget also supports significant investments in new production facilities for uranium processing and plutonium pit manufacturing at the fastest responsible pace. The budget request contains close to equal funding for stockpile management and production modernization, a true indication of the intent to accelerate activities by working on weapon design and production in parallel with infrastructure revitalization. The science and engineering support for the weapons program stays strong to allow for the continued development of capabilities to design and certify the stockpile without testing and to stay ahead of threats.

The Defense Nuclear Nonproliferation budget request sustains our efforts to reduce nuclear risk by eliminating, minimizing, and securing nuclear and radiological materials. In addition, the DNN portfolio request recognizes the changing world by increasing support for policy and technology development aimed at the increased proliferation risks associated with the increase in nuclear energy around the world, preparing for an increasingly complex arms control and global stability environment, and by initiating a bioassurance program. Similarly, the increased budget request for the counterterrorism and counterproliferation program is responsive to the changing threat environment.

The Naval Reactors budget request recognizes the excellent stewardship provided over the years and continues to support the high priority needs to replace aging tools, build a new spent fuel handling facility, and support the COLUMBIA-class production schedule.

The challenges NNSA faces ahead are steep and we are mindful of the resources entrusted to it. For FY 2023, NNSA scrubbed prior year balances and used available funds to offset some of the increased budget needs. NNSA, in partnership with Congress and our colleagues in the Departments of Energy and Defense, is steadfast in our commitment to fulfill vital national security mission and deliver our goals. We greatly appreciate your support.

**Written Statement of William “Ike” White
Senior Advisor for the Office of Environmental Management
Before the Subcommittee on Energy and Water Appropriations
United House of Representatives
May 11, 2022**

Chairwoman Kaptur, Ranking Member Simpson, and Members of the Subcommittee, it is an honor to appear before you today to represent the Department of Energy’s (DOE) Office of Environmental Management (EM).

EM’s mission represents the government’s strong commitment to cleaning up the environmental legacy of the national defense programs that helped end World War II and the Cold War. EM’s vital mission does not just address past legacy, though, it also helps to support and enable DOE’s ongoing national security and scientific research missions.

The Fiscal Year 2023 budget request of \$7,643,202,000 for EM reflects the Biden Administration’s strong commitment to advancing the cleanup mission and preparing for sustained success, maintaining national security priorities, and supporting communities most impacted by the environmental legacy of the past.

Record of Results for the Environment

Over the last 30 years, EM has made significant progress, completing cleanup the environment at 92 out of a total of 107 sites. EM’s significant accomplishments to date have included completing demolition of the Plutonium Finishing Plant, a facility that produced two-thirds of the nation’s Cold War-era plutonium at the Hanford Site in Washington state; completing the removal of the former uranium enrichment complex at Oak Ridge in Tennessee; completing the Advanced Mixed Waste Treatment Project at the Idaho National Laboratory where 65,000 cubic meters of legacy transuranic waste were processed and disposed; completing construction and initiating operation of two depleted uranium hexafluoride (DUF6) conversion plants at the Portsmouth Site in Ohio and the Paducah Site in Kentucky; opening the world’s only deep geological repository for transuranic waste generated from atomic energy defense activities at the Waste Isolation Pilot Plant in New Mexico; and completing construction on the entire tank waste treatment system at the Savannah River Site in South Carolina, enabling significant progress in how the Department tackles one of its largest environmental and financial liabilities at that site.

New Era of Cleanup Success

These accomplishments are enabled by the significant investments Congress has made in the EM program and have ushered in tangible results for communities and the environment in a safe, effective, and responsible manner. Even as EM continues to grapple with a global pandemic, the program achieved a set of impactful accomplishments at sites across the country.

At the Y-12 National Security Complex in Oak Ridge, Tennessee EM demolished the Biology Complex. EM also advanced deactivation and demolition work at the Oak Ridge National

Laboratory (ORNL) with demolition of the Radiological Lab's West Cell Bank and the Tritium Target Preparation Facility now complete. ORNL and Y-12 house hundreds of excess contaminated facilities that comprise the largest inventory of high-risk buildings in the DOE complex. Collectively these efforts are reducing risks, stabilizing facilities, and paving the way for advancing cleanup and providing land for research and national security missions. At the Hanford site in Washington state, EM is treating radioactive and chemical waste from large underground tanks for the first time ever on a large scale, and we are progressing towards initiation of the Direct Feed Low Activity Waste (DFLAW) project that will convert into glass or vitrify this waste for disposal. At the Savannah River Site in Aiken, South Carolina we are now processing record amounts of tank waste and recently broke ground on the important Advanced Manufacturing Collaborative facility that will provide essential space for mission work and facilitate academic, industry, and community collaboration in state-of-the-art laboratory space. The Advanced Manufacturing Collaborative will bring cutting edge innovations to help meet the needs of the EM cleanup mission and create an environment to develop a diverse and talented next generation workforce.

The EM team in Idaho recently completed buried waste remediation helping to protect the Snake River Aquifer. More than 200 transuranic waste shipments were received last year at the Waste Isolation Pilot Plan (WIPP) in New Mexico. This includes shipments from Los Alamos National Laboratory, where the EM team certified and completed 30 shipments to WIPP last year.

Cleanup activities at the Brookhaven National Laboratory in New York are complete with demolition of the 320-foot-tall red-and-white High Flux Beam Reactor exhaust stack, restoring the areas skyline. Lastly EM has initiated demolition activities on the first of three massive former gaseous diffusion plants that will be taken down at the Portsmouth Site in southern Ohio. Site crews have now completed 65 percent of the X-326 Process Building demolition project.

Steady Progress Planned for Fiscal Year 2023

The Fiscal Year 2023 budget request builds on these significant achievements by positioning EM for steady and sustained progress in how we tackle radioactive tank waste. Key investments are proposed to continue to drive risk reduction and significant changes across EM's portfolio of sites, as well as to continue to aid the Department's vital science and defense missions.

Protecting the environment by addressing radioactive waste stored in underground tanks at Hanford, Savannah River and the Idaho National Laboratory is a top priority for EM. The budget request enables treatment of one million gallons of tank waste through the Tank Side Cesium Removal system and supports the commencement of vitrifying this waste by the end of 2023 via the Direct Feed Low Activity Waste system. After decades of support from the local community, Congress and the workforce this transformational accomplishment is within sight.

As we prepare to begin operating Hanford's low-activity tank waste vitrification capabilities, the budget request also invests \$316.2 million to ramp up work on the Waste Treatment Plant's High Level Waste facility to be able to tackle that portion of Hanford's tank waste inventory. In parallel, EM continues to identify safe, effective, and viable options for the treatment of all

Hanford's tank waste, including supplemental low activity waste. One such approach is the proposed Test Bed Initiative (TBI) Demonstration. The proposed TBI Demonstration would address independent recommendations and comments from the Government Accountability Office, the National Academy of Sciences, national laboratories, and others to further study the potential cost, safety and environmental performance of potential treatment and disposal alternatives. Implementation of this TBI Demonstration technology on an industrial scale could have the potential to safely pretreat low-activity waste from Hanford tanks, solidify the waste in grout, and dispose of it off-site in a manner that is protective of the workers, the public and the environment.

In addition to helping solve the challenges of Hanford tank waste, the request will enable EM to continue meaningful cleanup progress to place another former production reactor into interim safe storage, transfer radioactive capsules to safer dry storage, and treat another 2 billion gallons of contaminated groundwater.

In South Carolina, the Fiscal Year 2023 budget request supports full utilization of capabilities to process tank waste. The Salt Waste Processing Facility will further accelerate the tank waste mission by increasing the processing of to 6 million gallons in Fiscal Year 2023 up from an expected 3 million gallons in Fiscal Year 2022. As a result, the Savannah River Site could complete the bulk of its tank waste treatment mission in a decade.

EM actively works with other DOE organizations to assess infrastructure needs across the Department and will continue to pursue modernizing efforts throughout the complex, including at the Savannah River Site to facilitate project completion.

At the same time, risk reduction work will continue at the Savannah River Site, including work towards disposition of remaining transuranic waste and remediating contaminated soil and groundwater.

At the Idaho National Laboratory, the request supports operations of the Integrated Waste Treatment Unit which will ultimately treat about 900,000 gallons of liquid waste by turning it into a granular solid. EM also will meet another key commitment to the state of Idaho by completing the transfer of EM-owned spent nuclear fuel to on-site dry storage.

The request will also allow EM to address high-risk excess contaminated facilities and address contaminated groundwater across the complex. EM will complete demolition of the X-326 Building and then pivot to pre-demolition activities in the second former gaseous diffusion plants that will be taken down at the Portsmouth Site over the next decade. As work advances at Portsmouth, EM will continue to transfer land for economic development, achieving the goal of returning the site to a condition where it can be used to help the community grow and thrive.

The request also supports demolition of the Main Plant Process Building at the West Valley Demonstration Project in New York as well as continued demolition work at the Engine Maintenance, Assembly, and Disassembly (EMAD) and Test Cell C (TCC) complexes scheduled to begin later this year at the Nevada National Security Site. These large and unique legacy

nuclear facilities have ties to historical nuclear propulsion rocket development and testing programs at the site.

Support for National Security Missions

In addition to reducing environmental risks at these and other sites across the complex, the EM mission benefits the Department's broader national security and scientific research missions. Nowhere is this more evident than at Oak Ridge where the successful demolition of the former uranium enrichment complex at the East Tennessee Technology Park has enabled EM to begin major cleanup operations at the Oak Ridge National Laboratory and Y-12 National Security Complex. Demolition of the Biology Complex at the Y-12 National Security Complex involved tearing down the six-story, 255,000 square-foot Building 9207 and the three-story, 65,000 square-foot Building 9210. With this project complete, EM will transfer the 18-acre area to the National Nuclear Security Administration (NNSA) later this year. The area is the planned location for the future Lithium Processing Facility. The Fiscal Year 2023 budget request supports continued cleanup of excess facilities at Oak Ridge, including the Radiological Development Lab, Bulk Shielding Reactor, and Low-Intensity Test Reactor at the Oak Ridge National Laboratory, and the dilapidated East Column Exchange (COLEX) equipment at the Alpha-4 facility at the Y-12 National Security Complex.

Today, EM is in the midst of a significant infrastructure and modernization campaign at WIPP. Last year EM began mining the West Access Drifts and completed construction of the Salt Reduction Building. The Salt Reduction Building is a key component of the Safety Significant Containment Ventilation System (SSCVS) to improve air quality in the underground portion of the site. Along with providing for continued WIPP operations, as well as waste characterization and transportation programs, the budget request supports the continued infrastructure recapitalization projects, as well as mine modernization activities and safety upgrades in Fiscal Year 2023. Shipments of legacy transuranic waste to WIPP will progress from sites across the DOE complex, including the Los Alamos National Laboratory in New Mexico, where deactivation and decommissioning of NNSA's Ion Beam Facility will be initiated in Fiscal Year 2023.

At the Lawrence Livermore National Laboratory, the removal of the Livermore Pool Type Reactor was completed. This marks a significant cleanup milestone and demonstrates EM's strong cooperation with its NNSA and U.S. Army Corps of Engineers partners while setting the stage to begin demolition of Building 280 later this year.

In addition, EM is pursuing a world-class technology development program to accelerate the overall cleanup mission, increase efficiency, and protect human health and environment. EM is leveraging the expertise of the Savannah River National Laboratory and the Network of National Laboratories for Environmental Management and Stewardship to develop innovative solutions in the fields of environmental cleanup, national security and science and energy security that will benefit EM, the NNSA and other DOE missions.

Diverse and Talented Workforce

The talented and dedicated men and women across EM are the program's greatest assets. While significant progress continues across the DOE complex, the EM mission will span several decades at some sites. With that in mind, EM is taking steps to ensure a successful and sustainable program that will enable mission completion. EM is investing to support workforce development and build a workforce that promotes diversity, equity, inclusion, and accessibility. These principles are fundamental to EM because they enable every aspect of the cleanup mission.

The budget request provides resources to build a diverse pipeline of talent and support high-quality jobs in environmental cleanup. For example, the \$56 million request in Fiscal Year 2023 supports EM's Minority Serving Institutions Partnership Program, which is designed to help build and maintain a well-trained, technically skilled, and diverse workforce. By partnering with Minority Serving Institutions and Historically Black Colleges and Universities, this program promotes the education and development of EM's next generation workforce in STEM-related disciplines.

Support for Impacted Communities

As EM makes steady cleanup progress and prepares for future mission needs, EM remains committed to addressing the responsibilities the Department has to the communities most directly impacted by the environmental legacy of the past. The FY 2023 request represents a significant investment in helping the communities that played such an important role in US history continue to grow and thrive in the future. The EM mission itself is aligned with broader environmental justice goals that lead to a vibrant future in all communities. This year, the EM Los Alamos Field Office was selected as one of five DOE pilot programs for the cross-cutting Justice40 Initiative. At its core, the Justice40 Initiative is a whole-of-government effort to lift communities by delivering at least 40 percent of the overall benefits from certain federal investments, including the remediation and reduction of legacy pollution, to disadvantaged communities.

The budget request further boosts support for the Tribal Nations, Alaska Native communities, and communities around EM sites ensuring they are safe, providing opportunities for local input into cleanup priorities and helping build a vibrant future. The request includes Payment in Lieu of Taxes funding for communities near Hanford and Savannah River to support schools, roads and other local priorities. In addition, \$40 million is provided to establish a new Community Capacity Building initiative. This grant program will provide assistance to those communities around EM sites and will be developed in consultation with community stakeholders to address their needs.

Conclusion

The FY 2023 budget request is the latest sign of this Administration's strong support for EM's vital mission. As the mission is carried out, EM is committed to continuous improvement and

making further advancements to ensure that cleanup activities are conducted in a safe, efficient, and cost-effective manner.

EM will continue to work in a collaborative manner with workers, unions, Tribal Nations, states, local communities, and Congress on opportunities to achieve shared goals of protecting the environment and preparing for future cleanup success.

QUESTIONS FOR THE RECORD
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT
U.S. HOUSE COMMITTEE ON APPROPRIATIONS

**Hearing: FY23 Budget: National Nuclear Security Administration
and Environmental Management**
Wednesday, May 11, 2022

Questions from Chairwoman Kaptur

1. Capacity of the NNSA Complex

NNSA is in the midst of an ambitious nuclear modernization program that has severely strained the nuclear weapons complex. Previous NNSA Administrators, and even the current head of STRATCOM, have said that NNSA can only absorb so much work at one time. I am concerned that NNSA is on an unsustainable path, driven by DOD decision makers that do not fully understand these limits.

Q1: What can NNSA do within the interagency to re-balance risky nuclear modernization plans while meeting defense needs?

A1: The Nuclear Weapons Council's (NWC) role is to ensure NNSA and the Department of Defense (DoD) are aligned to deliver a credible and effective nuclear deterrent to the Nation. This alignment includes managing risks associated with schedules across both DoD platforms and NNSA weapons programs. The NWC continuously seeks opportunities across the nuclear deterrent portfolio to transition to modern capabilities and to reduce the risk of schedule delays and, in turn, operational risk. While the NWC is statutorily required to meet quarterly, for years the NWC has elected to meet once a month at the executive-level, reflecting the amount of work to be done and the level of commitment to the nuclear deterrence mission at the highest levels of both Departments.

NNSA continues to learn how to accelerate modernization efforts after having paused both design and production enterprises for decades. We are developing bridge strategies and leap-frog manufacturing capabilities. However, given the large number of systems in design and the amount of infrastructure being built, a perturbation or schedule slip can disrupt multiple systems. The NNSA and the Nuclear Weapons Council are proactively exploring options for when the plans are disrupted, and remain challenged to learn about delays in a timely manner. This is an area targeted for improvement through risk-based planning.

It is important that we build the right capability and capacity for the future. Understanding the capacity of the enterprise, and the needs of the future are areas we are working together to improve. As described in the Nuclear Posture Review, the production based resilience program will include bridging strategies, major infrastructure recapitalization, strengthening our supply chain, reducing single points of failure, and providing a resilient and adaptive production enterprise.

2. Manufacturing Base

As I've said many times before, Ohio is part of America's great manufacturing heartland. We have the space, workforce, and materials all in one place. NNSA has allowed itself to become too dependent on too few suppliers. While it is true that your specifications are exacting, there are certainly any number of companies across the country – including in my home region – that would welcome the work.

Q2a: What is NNSA doing to expand its manufacturing base? Will these efforts help reduce costs and create a more resilient supply chain?

A2a: NNSA has developed a monitoring framework for nuclear weapons components, subsystems, and materials consisting of four pillars of activities that holistically support the nuclear security enterprise industrial base (supply chain, operations and facilities, logistics and transportation, workforce). NNSA uses these pillars to identify the full scope of industrial base challenges to maintain the nuclear stockpile and to ensure the health and capacity of the industrial base. To bolster the supply chain, NNSA's management and operating (M&O) partners have increased the sharing of audit information through a Master Supplier List, simplifying the contracting process and resulting in cost savings. Additionally, efforts are underway to consolidate information about supplier capability and capacity across the nuclear security enterprise through a shared supply menu. NNSA M&O partners are also cultivating long-term relationships with companies that have shown willingness and ability to meet the needs of our enterprise, including companies located in Ohio and across the Nation. These efforts are designed to give greater insight into the health of specific commodity markets allowing for better informed business decisions and ultimately making the NNSA supply chain more resilient.

Q2b: To supplement some of the academic alliances you currently have, what value would there be in an academic and industry consortium focused on helping NNSA with its manufacturing needs?

A2b: Partnerships and collaborations between the nuclear security enterprise's laboratories, plants, and sites, academia, and industry are extremely valuable. The three DOE/NNSA national security laboratories are engaged in many partnerships with academia and industry, including some focused on advanced manufacturing.

In addition, we have expanded our partnerships to address manufacturing needs. Some examples include:

- The NNSA Minority Serving Institution Partnership Program (MSIPP) that enables sites to support university-led consortium that provide pathways for people from underserved and underrepresented communities to join the nuclear security enterprise. Through this program, five of the seven consortiums in which Pantex and Y-12 participate focus on advanced manufacturing. These consortiums have enabled our sites to work with geographically diverse universities; collaborate with other lab, plants, and sites; and to accelerate research in additive manufacturing, sensor development, and unique material manufacturing processes.
- Another new opportunity that the DOE/NNSA currently is pursuing is the Apprenticeships for Complete and Committed Employment for Specialized Skills (ACCESS) Program, as authorized in the FY 2020 National Defense Authorization Act (P.L. 116-92) and appropriated in FY 2021 appropriations (House Report 116-449). The ACCESS program seeks to provide funding to technical training programs and technical training schools for pre-apprenticeship and apprenticeship programs to train a skilled workforce in the trades needed at the DOE/NNSA laboratories and plants such as machinists, welders, metal workers, IT/cybersecurity professionals, advanced manufacturing machine operators, fissile material handlers, radiological control technicians, HVAC technicians, industrial hygienists, fire protection engineers, etc. The technical training programs that can be funded through ACCESS are partnerships with industry, especially in the developing the skills required to operate, repair, and maintain the key and unique equipment that is procured for the nuclear security enterprise's manufacturing base. The ACCESS Program requires a partnership be established between a national laboratory or plant to develop the skill sets needed by technicians at those facilities and then provides funding to training programs to develop the skills base. The first Funding Opportunity Announcement for the ACCESS Program was released in late April 2022 with proposals due in July 2022. Awards are expected to be made in October 2022. It is expected that as the ACCESS program matures and reaches more technical training programs it will play a key role in assisting the DOE/NNSA to continue to cultivate technical expertise at the cutting edge in manufacturing and other areas at the plants and sites. Additional industry-academic interactions like ACCESS would be of value to help bolster manufacturing capabilities within the national security enterprise.

3. NNSA Workforce Needs

As NNSA executes its nuclear modernization program, which is unprecedented in its scope and complexity, the workforce at its laboratories and production sites must be ready to respond to the demand. This is particularly true as retirements and a nationwide competition for talent pose challenges for recruiting and retaining a world-class workforce.

Q3: What is NNSA doing to monitor its workforce and to attract the next generation of skilled workers who are critical to meeting the mission?

A3: NNSA's expanding and challenging national security missions require it to recruit, train, and retain a highly skilled workforce across the nuclear security enterprise. To monitor the workforce and attract the next generation of skilled workers, NNSA has initiated and implemented the following:

- The NNSA Office of Human Resources' (OHR) Employment and Workforce Planning Division conducts a biweekly staffing review with each individual program, functional, and field office to review all aspects of employee recruitment and retention and ensure human capital resources are meeting the mission needs of the office.
- NNSA uses data analytics to ensure specific attention is given to mission critical metrics such as attrition rates, (especially in mission critical occupations), percent of retirement eligible, years until eligible for retirement, human capital needs by geographic location, diversity goals, average onboard numbers, and pending employee hiring actions.
- NNSA operates multiple active university programs to retain top-quality individuals, that will feed into the nuclear security enterprise's workforce needs. The NNSA Graduate Fellowship Program (NGFP), the Minority Serving Institution Partnership Program (MSIPP) and the Tribal Education Partnership Program (TEPP) are vital workforce pipeline development programs. These programs are strategically linked to succession-planning efforts to develop, recruit, and retain highly qualified and diverse talent across the enterprise. Investment in these programs provides the next generation of talented scientists and technicians with opportunities to acquire the practice and expert judgment needed to sustain the enterprise.
 - NGFP introduces over 60 fellows to the Nuclear Security Enterprise (NSE) annually and serves nearly all NNSA Program and Field offices. From the 650 plus fellow alumni, approximately 85% are currently in positions with ties to national security. Many of these fellows go on to work either directly for NNSA or at national labs. For example, of the 58 fellows who completed the program in June 2022, 21 accepted NNSA Federal civilian positions and another 25 accepted positions with NNSA Management and Operating (M&O) partners or NNSA subcontractors.
 - Today, MSIPP and TEPP sponsor 26 consortia consisting of 49 MSIs, the nuclear security enterprise and other departmental laboratories. In FY 2021, these consortia supported 417 undergraduate and graduate students in degree and certificate programs. In addition, 216 faculty professional development opportunities were offered, 169 new and continuing MSIPP-type courses and labs were supported, and 103 K-12 outreach activities occurred. Two new degree programs and three new certificate programs were created to build STEM capacity. During national and international workshops, 172 publications were accepted by nationally recognized societies, and 257 conference presentations were given. Additionally, from 2019-2021 NSE M&O partners supported nearly 500 MSIPP interns and hired over 70 MSIPP students.

To attract and retain the management and operations contractor workforce:

- In FY 2022 NNSA set up a new Federal organization called NNSA Partnership and Acquisition Services (PAS). This office will provide an even higher fidelity focus on all aspects of how the Federal workforce can provide the M&O Partners with the tools they need to succeed in their mission and with their human resource challenges.
- The NNSA PAS Contractor Human Resource (CHR) Team continues to partner with the M&O Partners to ensure they have the tools to attract and retain the next generation of

skilled workers. This includes ongoing working groups focused on compensation, benefits and other items that could assist with recruitment and retention.

- NNSA approved a Mid-Year Compensation Adjustment (MYCA) to increase the salaries of M&O employees to slow the rate of attrition to higher paying jobs.
- M&O partners are continuing to develop and implement employee retention plans for critical mission areas to help retain employees.
- NNSA provided the M&Os with flexibilities to provide increased benefits to their employees to be phased in in calendar year 2023 or sooner.

4. Plutonium Pit Aging

NNSA's pit production strategy was devised in part to address conflicting assessments of how long a plutonium pit can age in the stockpile and remain effective. When it comes to pits, NNSA's focus in recent years has been to prioritize production, seemingly at the cost of advancing the science of pit aging.

Q4: What is NNSA doing to further its understanding of pit aging, and how will further developments in this area be incorporated into a contingency plan since NNSA will not meet its pit production requirements?

A4: There are large uncertainties in current quantitative estimates of how pit aging affects nuclear weapon performance. Significant scientific efforts to reduce these uncertainties are underway, using a combination of theoretical developments, simulations using high performance computing, single-effect small-scale experiments, complex integrated dynamic subcritical experiments, and evaluation of our historical test data. These efforts will ultimately increase our confidence in estimates of pit lifetimes. The complex nature of pit aging phenomena, coupled with the extreme dynamic conditions of nuclear weapon performance, means uncertainties will likely be reduced only gradually over time.

To better understand plutonium pit aging, the NNSA has:

- Funded studies at the DOE/NNSA laboratories that include theoretical, computational, and experimental investigations on the effects of aging on plutonium and on plutonium pits;
- Developed and begun to execute the Enhanced Capabilities for Subcritical Experiments project, which will image plutonium pits in the final stages of implosion and provide new neutron diagnostics for subcritical experiments;
- Performed reviews of bi-laboratory progress since 2006;
- Commissioned a Defense Programs Advisory Committee (DPAC) study to examine plutonium aging;
- Launched the Design for Manufacturing (DfM) Initiative; and
- Sponsored a full JASON study and a JASON letter study on plutonium aging.

In November 2021, DOE/NNSA submitted to Congress a cross-program integrated plan to investigate plutonium and pit aging, containing near, mid, and long-range milestones.

In addition to our scientific efforts to reduce uncertainties in estimates of pit lifetime, we have made changes during life extension programs, modifications, and alterations to increase primary performance margins and thereby mitigate risks associated with pit aging.

NNSA has outlined three categories of contingency plans for Department of Defense Warhead Deliverables: (1) exercising surge capacity once pit production has been established, (2) incorporation of some amount of pit reuse, and (3) making changes to the warhead delivery schedule rate. NNSA is also committed to developing a reliable capability to produce War Reserve pits as soon as possible.

5. Defense Nuclear Nonproliferation

As you know, NNSA has an important nonproliferation role partnering with countries and their law enforcement to reduce nuclear material theft and terrorism.

Q5a: Our nonproliferation programs have had great successes, and there is certainly more to do. However, there is always room for fresh ideas, and we face many new proliferation challenges. In that regard, what does the future of the nonproliferation program look like, and how does the new Bioassurance Program proposed in the budget fit in to your vision?

A5a: NNSA's nonproliferation program must be prepared to address multiple diffuse threats from both state and non-state actors simultaneously. The current geopolitical environment including Russia's unprovoked invasion of Ukraine, deepening strategic competition between Russia and China, and the persistent threat posed by Iran, the Democratic Republic of Korea (DPRK), and violent extremist organizations, present both near-term and longer-term challenges for NNSA to address. NNSA must continue its core work to prevent, counter, and respond to the proliferation and terrorism threats posed by state and non-state actors and focus on new initiatives to prepare for future threats and challenges. In the immediate term, NNSA will continue to provide a rapid and flexible response in support of Ukraine's nuclear security and nuclear safety. At the same time, NNSA will redouble its international engagements with foreign partners to reinforce a global commitment to nonproliferation and nuclear security norms that are under increased pressure in the wake of Russia's further invasion of Ukraine.

Looking ahead, NNSA will prioritize new initiatives to stay ahead of emergent challenges. NNSA will invest in cross-cutting research and development and the workforce that will provide the technical agility to support a range of nonproliferation missions. Focus areas in the coming years will include developing new technologies for proliferation detection, nuclear test monitoring, forensics, and nuclear security. NNSA also must anticipate the arms control treaty after next, including the development and assessment of technologies and approaches for nuclear weapons-related limitation and reduction initiatives, including capabilities for warhead and component confirmation, monitoring, and dismantlement. Additionally, NNSA will continue to prioritize the peaceful expansion of nuclear energy, a key technology for combatting climate change. This includes expanding a suite of activities to support the U.S. reactor industry in incorporating nonproliferation and nuclear security measures as early as possible into advanced nuclear and small modular reactor (A/SMR) designs and increasing technical support for states embarking on civil nuclear energy programs. NNSA will also work to position nonproliferation as part of the vital decision-making process that governments undertake when looking at nuclear energy as part of sustainable clean energy strategies to secure their energy requirements.

As an agile science and technology organization, NNSA will establish new research or programmatic efforts as appropriate to respond to our understanding of the impacts of new technologies. For example, NNSA has proposed a new Bioassurance Program. Complementing DOE's Office of Science's basic science investments and addressing national security and emerging threat concerns that are informed by classified information, this program would directly respond to needs expressed in the 2018 National Biotechnology Strategy and the President's Executive Order on *Advancing Biotechnology and Biomufacturing Innovation for a Sustainable, Safe, and Secure American Bioeconomy*. Coupled with the other ongoing efforts in DOE like the Biopreparedness Research Virtual Environment (BRaVE) initiative, the Bioassurance Program will enable a more engaged DOE role in national biodefense, which leverages capabilities in mitigating biological/biotechnology-related threats of national security concern. NNSA also recognizes the need to anticipate emerging technology developments that have the potential to lower the barrier to proliferation, and NNSA will seek to build out a predictive approach to anticipate the impact of those technologies on how we carry out our nonproliferation and nuclear security missions.

Q5b: How are we positioning ourselves to address emergent challenges as other countries seek to harness nuclear energy technologies?

A5b: NNSA actively supports the safe, secure, and responsible global expansion of civil nuclear energy as a key technology for meeting U.S. climate goals and enabling partner countries to achieve net zero emissions. As other countries seek to harness nuclear energy technologies, NNSA pursues a broad set of activities to enable partner countries to develop and maintain the highest standards of nonproliferation and nuclear security and safeguards. NNSA works with U.S. industry, multilateral institutions such as the International Atomic Energy Agency (IAEA), and partner countries so that nonproliferation measures, including safeguards, security, and proliferation resistance, are integrated as early as possible in the development and deployment of U.S. advanced and small modular (A/SMR) nuclear reactor designs and reinforced by robust national regulatory systems and infrastructure.

Questions from Ranking Member Simpson

8. NNSA: Workforce

NNSA will need a full and capable workforce to accomplish its mission – not just the federal workforce at NNSA itself, but also the contractor workforce at the national laboratories and production sites.

Q8a: Administrator Hruby, how are you determining the proper division of work between the federal and contractor workforce?

A8a: NNSA's federal workforce is responsible for program and project management and oversight, as well as providing a strategy to execute our mission. NNSA's M&O workforce is responsible for operations and execution of program and project activities at the labs, plants, and sites. By having clear and integrated objectives, the federal workforce and M&O workforce will work toward common objective and enable efficient mission success. NNSA's Human Resources Office regularly assesses the adequacy of federal personnel at headquarters. Our M&O contractors are responsible for the staffing of the requirements and our Office of Partnership and Acquisition Services works closely with human resource leaders across the complex to ensure the required work levels are met.

Q8b: Administrator Hruby, what is, or can, NNSA do to address recruitment and retention issues for each component of the workforce necessary to effectively implement the nuclear modernization program question?

A8b: NNSA's recruitment strategy focuses on ensuring we have the right people in the right jobs at the right time. Specific attention is given to mission critical occupations. As a result of these considerations and the hiring trends across NNSA, we devised a strategy to focus on streamlining the hiring process and implementing viable recruitment strategies for all occupational series to acquire the talent necessary to ensure NNSA's workforce is capable of meeting today's mission-set and the evolving challenges of tomorrow.

To address recruitment and retention issues, NNSA increased its presence at military job fairs such as Service Academy Career Conferences, engaged other available recruitment resources such as outreach to Operation Warfighter, SkillsBridge, national veterans organizations, VA vocational rehabilitation programs, and DoD Transition Assistance Program. In 2020, NNSA stood up a recruitment and outreach team to focus on building a viable recruitment program. In FY 2022, NNSA recruitment efforts have been planned and executed as presented in the chart below:

Event	Date
American Indian Science and Engineering Society Virtual College and Career Fair	October 15, 2021
Polytechnic University of Puerto Rico Virtual 2021 Career and Internship Fair	November 3, 2021
Colorado School of MINES STEM Virtual Career Fair	January 26, 2022
Texas A&M University Spring 2022 Engineering Virtual Career Fair	January 28, 2022
Nuclear Security Enterprise Virtual Job Fair	March 9, 2022
American University Virtual Spring 2022 Job & Internship Fair	April 6, 2022
Service Academy Career Conference Washington, DC	May 6, 2022
Nuclear Security Enterprise Recruiting Event – Naval Base Kitsap	June 22, 2022
Nuclear Security Enterprise Virtual Job Fair	June 29, 2022
Nuclear Security Enterprise Job Fair	July 2022
STEM Diversity Virtual Career Fair	August 17, 2022
Service Academy Career Conference, San Diego, CA	August 26, 2022
Virginia Tech Engineering Expo	September 13-16, 2022
Purdue University Industrial Roundtable	September 13-15, 2022
University of Virginia Engineering Career Fair	September 14, 2022
New Mexico Tech Career and Graduate School Fair	September 20, 2022

With respect to the retention of a highly qualified and committed workforce, NNSA has a policy designed to judiciously utilize the flexibility of retention incentives to retain qualified personnel, consistent with overall NNSA staffing needs, budgetary considerations, and the goal of maintaining a high-quality diverse workforce.

To further support recruitment and retention, NNSA delivers premier workforce development programs, which support employees through their careers. Employees are empowered to take ownership and drive their career development by creating their own individual development plans. NNSA also has focused employee engagement to promote a healthy culture that empowers employees and promotes diversity, equity, inclusion, and accessibility.

NNSA Partnership and Acquisition Services (PAS) works closely with the Management and Operating (M&O) contractors across the Nuclear Security Enterprise to ensure they have the tools needed to attract and retain employees and have the workforce needed to complete the NNSA mission. Each lab, plant, and site have a site-specific recruiting plan they implement to attract talent. In FY2022, we implemented a mid-year salary adjustment and more flexible benefits to address the increased attrition. We continue to look for all possible ways to stay competitive while being good stewards of the taxpayer's dollars.

9. NNSA: Bioassurance Program

The budget request includes funding to establish a new NNSA bioassurance research and development program. The Department of Energy and Department of Homeland Security have an MOU on prioritizing DOE labs to support DHS missions, including biological threats.

Q9: Ms. Hinderstein, why does Administration view bioassurance as part of the mission of NNSA's Defense Nuclear Nonproliferation program? Why would this work not be more appropriately funded by DHS or other agencies already funding work in this area?

A9: This proposed Bioassurance Program provides science and technology leadership in response to needs expressed in the President's Executive Order on *Advancing Biotechnology and Biomanufacturing Innovation for a Sustainable, Safe, and Secure American Bioeconomy* and the 2018 National Biodefense Strategy (NBS). Coupled with the other ongoing efforts in DOE like the Biopreparedness Research Virtual Environment (BRaVE) initiative, the Bioassurance Program will support core capabilities at the national laboratories and uniquely bring three key aspects to bear: a global perspective and framework, a threat-based perspective with trusted partnerships, including DoD and the IC, and a capability that continuously monitors the global landscape to ensure the United States can anticipate and respond to technological advances that may threaten the nation's security.

Many agencies have responsibilities for and contribute to biodefense, but their implementation efforts are not necessarily global, are not necessarily threat based, and are tailored to the realm of known biothreats in sectors limited to their specific mission. NNSA's global, threat-based perspective will complement the other dozen-plus agencies involved in biodefense. The unparalleled scientific and technical prowess at NNSA's national laboratories is crucial to understanding this evolving threat environment, including threats that are not on the list of known pathogens that agencies prepare for. Consequently, ensuring that the labs have the facilities and intellectual capital needed to reduce global threats is among NNSA's highest priorities and essential for meeting the Administration's biodefense objectives.

There is currently no sustained program to fully support biodefense and leverage our lab capabilities for bioassurance. DHS and other agencies that fund biological sciences and technologies research activities will continue leveraging laboratory capabilities through their specific Strategic Partnership Projects (SPP). Unlike SPP, the NNSA Bioassurance Program will steward unique foundational national laboratory capabilities required to achieve success for the whole of Government in biodefense, including through SPP.

Questions From Congresswoman Susie Lee

10. Nevada National Security Site Infrastructure

The Nevada National Security Site (NNSS) plays a critical role in U.S. national security. The site supports essential research, simulations, and experiments for the National Nuclear Security Administration's (NNSA) Stockpile Stewardship Programs. The site serves multiple essential functions, including nuclear nonproliferation, emergency response, environmental protection, and ensuring the safety and reliability of our nuclear weapons.

I visited the site in February and spent a day with the Nevadans who commit their lives to this essential national security work. It was great to see both Secretary Granholm and you, Administrator Hruby, visit the site this spring as well.

During your visit, I'm sure you also heard concerns from the site's employees about unstable funding, which has allowed the site's infrastructure to deteriorate in recent decades. I appreciate the attention you have shown for this issue, and I am committed to working with you to ensure the site's infrastructure is strong, productive, and worthy of its mission and workforce.

Q10: Administrator Hruby or Dr. Adams, would you please expand on your plans to ensure that the Nevada National Security Site receives the reliable, predictable infrastructure funding it needs to support its critical work? How can Congress be supportive in ensuring that we "fund the base" for the Nevada National Security Site's infrastructure over the long-term?

A10: NNSA fully understands the importance of modern infrastructure to ensure a safe, secure, and effective stockpile; reduce the risk to mission; and improve employee, public, and environmental safety. As you note, NNSA is making significant, strategic investments to support the NNSS workforce and mission by recapitalizing key facilities. During the last five years, NNSA has more than doubled its annual maintenance investment at NNSS, going from \$28 million in FY 2017 to \$64 million in FY 2023. NNSA partners with NNSS on vital line-item, minor construction, and recapitalization projects to modernize its campus and improve resiliency.

Importantly, NNSA is also investing in new infrastructure for sophisticated scientific experiments that are needed to assess the performance of new and aged nuclear material. The UIa Complex Enhancements and Enhanced Capabilities for Subcritical Experiments projects demonstrate the NNSA commitment to advancing as well as sustaining the capabilities at NNSS. It is through the growth of this mission critical work that NNSS will be able to sustain the workforce.

11. UNLV-NNSS Partnerships

In the Las Vegas area, we have a unique opportunity to strengthen our nation's pipeline of national security talent, with premier universities in close proximity to the Nevada National Security Site. We have already seen fruitful collaboration between the site and the College of Engineering at the University of Nevada Las Vegas, but there remains untapped potential in southern Nevada to broaden and strengthen our national security workforce. I'm interested in exploring ways we can collaborate with the Department of Energy (DOE) and the NNSA to grow this local talent pool and to build an even stronger pipeline from Nevada's universities.

One example that comes to mind is the Workforce Opportunities in Regional Careers program, through which DOE has awarded grants to build out regional workforce pools to support its environmental management and national security missions.

Q11a: Administrator Hruby, would you discuss current efforts by DOE and NNSA to foster collaboration between national security sites and local universities?

A11a: NNSA's Academic Programs cultivate a workforce pipeline and strengthen peer review in science and engineering disciplines important to the nuclear security enterprise. NNSA also sponsors the NNSA Graduate Fellowship Program that hires over 60 fellows annually to work alongside leading experts at NNSA program and site offices to participate in exclusive professional development, networking, and training opportunities, and to engage with national security stakeholders and support leading events and activities around the world.

NNSA's Minority Serving Institution Partnership Program (MSIPP) is designed to build a sustainable STEM pipeline that prepares a diverse workforce of world class talent through strategic partnerships between MSIs and the nuclear security enterprise. MSIPP supports 26 consortia consisting of 49 MSI partners and the nuclear security enterprise and has increased funding for outreach programs, degree and certificate programs, and professional development courses. These efforts have increased opportunities available to students on a national level and enhanced state-of-the-art research and development. This year, NNSA also launched a MSI Intern Program, bringing in over 85 MSI interns into the enterprise.

The University of Nevada, Las Vegas (UNLV) is part of three MSIPP consortia with goals to attract, train, and educate students in STEM fields. All three consortia focus on preparing diverse talent within the nuclear security enterprise. This summer:

- Five students from UNLV joined the NNSA MSI Intern Program that began in June 2022.
- Three students will be attending summer internships with Mission Support & Test Services (MSTS), the management and operations contractor for the Nevada National Security Site (NNSS).
- Six students will be attending in-residence internships at Los Alamos National Laboratory and Argonne National Laboratory.

NNSA's Stewardship Science Academic Alliance (SSAA) Program awards centers of excellence as well as research grants to academic institutions engaged in research critical to the work of the nuclear security enterprise. Currently, UNLV is the recipient of an SSAA grant for scientific research. NNSA also partners with DOE's Office of Science to sponsor academic programs that fund scientific and technical research in 40 states across the nation; providing more than \$100 million for centers, grants, consortia, and fellowships to support research – and researchers – addressing areas of interest within the nuclear security enterprise. One such partnership is the joint program in High Energy Density Laboratory Plasmas (HEDLP). UNLV is currently the recipient of three HEDLP research grants.

NNSA is also pursuing the Apprenticeships for Complete and Committed Employment for Specialized Skills (ACCESS) Program. The ACCESS program seeks to provide funding to technical training schools and technical training programs for pre-apprenticeship and apprenticeship programs to train a skilled workforce in the trades needed at the NNSA laboratories and plants such as machinists, welders, metal workers, IT/cybersecurity professionals, advanced manufacturing machine operators, fissile material handlers, radiological control technicians, HVAC technicians, industrial hygienists, fire protection engineers, etc. The first Funding Opportunity Announcement for the ACCESS Program was released in late April 2022 with proposals due in July 2022. Awards are expected to be made in October 2022.

Q11b: Would you expand a bit on the Workforce Opportunities in Regional Careers program, and on DOE's priorities for selecting national security workforce grant awardees?

A11b: In 2016, NNSA and the DOE Office of Environmental Management began working on ways to support regional workforce development related to long-term missions, resulting in the establishment of Workforce Opportunities in Regional Careers (WORC) grants. Through WORC, local colleges and universities provide education and training opportunities that align with requisite skills, experience, certification, and proficiencies across multiple scientific, engineering, technical, craft, and business support disciplines.

In 2019, an additional \$5 million in funding was made available for an expansion of the WORC program, doubling the amount of yearly funding available. As of July 2022, approximately \$1.6 million of that funding has been distributed. To utilize this additional funding, three new grant concepts were developed with distinct criteria:

- Nuclear Workforce Training Program (NuWork) with existing WORC Partners: NuWork establishes post-secondary training and education programs for job skills needed to support NNSA's critical missions. NuWork is focused on enhancing existing training programs or establishing new curriculum for training programs that align with NNSA enduring workforce demands. Funding for the training/education programs may cover costs associated with student recruitment, training equipment, student scholarships, supplies, and instructor salary as appropriate.
- WORC STEM: WORC STEM will develop a mentorship model program that uses an in-school mentorship framework. Under this model, mentors visit the school during the typical school day to interact with their mentees or classroom, or applied science teams,

such as robotics teams. The goal of the STEM program is to enable the mentors to convey confidence, interest, and excitement about science to their mentees or classroom, while helping them learn together.

- **WORC 4ALL:** WORC 4ALL will promote minority student skill development that is consistent with long-term talent needs associated with NNSA enduring missions. WORC 4ALL will focus on student scholarships and recruitment at one Historically Black College or University with existing academic programs that align with NNSA long-term talent needs.

In September 2021 NNSA awarded a fourth component to WORC of \$3.5 million for the Plutonium Modernization Program Workforce Development to expand South Carolina HBCU's educational and/or research capacity specific to the Plutonium Modernization Program. As of the end of July 2022, approximately \$1.3 million of this funding has been distributed for 141 scholarships at six of the eight participating HBCU's. The grant is focused on providing STEM student scholarships and enhancing training program equipment that align with the NNSA enduring workforce demands. Scholarships will be awarded in several critical skill areas.

Q11c: How can Congress support DOE in delivering national security workforce development support to high-potential areas like southern Nevada?

A11c: Current support by Congress provides funding for opportunities to go to current students and graduates for internships and fellowships, some of which interface with or are based at the Nevada National Security Site. NNSA continues to evaluate ways to develop the next generation national security workforce and looks forward to partnering with Congress in those efforts.

Questions From Congressman Kilmer

14. NNSA work with the Navy and Shipyards

Admiral Caldwell, as you know, the USS Enterprise (CVN-65) is awaiting final determination disposition of CVN 65 pending a required Environmental Impact Statement (EIS) that is due to be released in August 2022. The EIS will provide several possible courses of action regarding the recycling of CVN 65.

Once the EIS is released there will be a follow-on determination of which course will be the finalized plan. It is understood that there are options being considered that include both Puget Sound Naval Shipyard (PSNS) and other public shipyards based on cost and future shipbuilding and maintenance requirements.

Q14: As you know I represent PSNS which has a long history of working with Naval Reactors on recycling of submarines and carriers. That work has been important in filling troughs in maintenance at the yard. Knowing this, and given that the current need for maintenance and capability is at the forefront of everyone's mind, what can we do to continue to ensure PSNS will be included in future recycling efforts?

A14: PSNS & IMF has been safely disposing of naval submarine and cruiser reactor compartments since 1986. In 1990, the Navy authorized a program to recycle nuclear-powered ships at PSNS & IMF. This type of work will continue as additional nuclear-powered ships are decommissioned and require disposal.

Additionally, PSNS & IMF provides a critical capability to the Navy as the sole West Coast shipyard supporting nuclear-powered ship operations and maintenance around the world. Regardless of what decision the Navy makes on ex-Enterprise dismantlement and disposal, PSNS & IMF will continue to play an essential role in nuclear ship maintenance and decommissioning and will maintain a full workload well into the future.

Congressman Reschenthaler

17. Thorium Molten-Salt Reactors

According to reports, the Chinese Communist Party has taken special interest in thorium molten-salt reactors and is investing \$3.3 billion to develop these reactors for their nuclear-powered aircraft carriers.

Alarminglly, under the Obama Administration, the Chinese received considerable help from American institutions in their development of thorium reactor technology.

Q17: Admiral Caldwell, are you aware of China's efforts to develop thorium-powered naval warships? How should the U.S. respond to these efforts?

A17: Naval Reactors (NR) maintains an awareness of various nuclear reactor technology developments around the world in both the commercial and military sectors. For the past 70 years, NR has developed reactor technology using pressurized water reactors. The technology that we have developed has allowed the U.S. Navy to maintain an advantage over our adversaries when it comes to nuclear propulsion. NR has studied and evaluated the use of molten salt reactors for propulsion purposes and has determined that molten salt reactors do not meet the needs of the U.S. Navy.

As reflected in our Fiscal Year 2023 budget request, NR's research and development strategy represents a renewed investment in cutting-edge technologies aimed at reversing an eroding capability gap with strategic adversaries like China and Russia. Technology investment is critical to fielding new technologies ready for future classes of ships and to lower costs and reduce construction timelines. These investments also enhance and improve the performance of today's operational fleet of carriers and submarines; which is especially important given the increasing competition in the global maritime environment. Naval Reactors is on a path to identify and develop new technologies for inclusion in the next generation of nuclear-powered ships while simultaneously delivering the enhanced capabilities to the existing fleet mentioned earlier. We are pursuing advanced reactor core and fuel systems, advanced manufacturing and inspection techniques, next-generation instrumentation and control architectures and sensors, and asymmetrical applications of emerging technologies. These advancements have the potential to deliver both greater capability and lower acquisition and lifecycle costs, while ensuring the Navy is constantly improving our advantage.

QUESTIONS FOR THE RECORD
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT
U.S. HOUSE COMMITTEE ON APPROPRIATIONS

**Hearing: FY23 Budget: National Nuclear Security Administration
and Environmental Management**
Wednesday, May 11, 2022

Congressman Simpson

6. EM: Idaho – Integrated Waste Treatment Unit (EM)

EM has had some challenges bringing the Integrated Waste Treatment Unit in Idaho online in a timely manner.

Question: Mr. White, could you please discuss the current status of efforts and when you expect the IWTU to become operational?

Answer: IWTU successfully concluded confirmatory run operations on July 27, 2022. The facility was in operation for approximately 9 consecutive weeks and processed over 135,000 gallons of simulant, with crews replicating anticipated system test conditions required for permitting. The facility is currently in cool down in preparation for the final system and equipment inspections prior to approval to begin radiological operations. Idaho successfully completed a contractor-led assessment to verify readiness for safe radiological operations and the Department has scheduled an independent federal facility readiness assessment that will commence shortly. DOE is working toward start of radiological operations this year.

Assistant Secretary's or Designee's
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7. EM: Waste Isolation Pilot Plant (EM)

The Waste Isolation Pilot Plant (WIPP) in New Mexico is the nation's only repository for the disposal of transuranic waste generated by atomic energy defense activities. As such, it is critical not only to our cleanup missions at sites across the country, but also to the missions of Defense Programs and the Defense Nuclear Nonproliferation program. Unfortunately, over the past several years, there have been operational, regulatory, and subcontractor performance issues.

Question: Mr. White, could you please discuss the current status of activities related to WIPP?

Answer: DOE is in the process of making significant infrastructure upgrades to WIPP. For example, DOE is making substantial progress on two major capital projects, the Safety Significant Confinement Ventilation System (SSCVS) and the Utility Shaft. Once complete, these infrastructure upgrades will immensely benefit the workers at WIPP while allowing for increased productivity.

- The SSCVS will allow for simultaneous ground control, mining and waste emplacement and the Utility Shaft will provide higher-capacity air intake, in conjunction with the SSCVS and will also add future hoisting capability.
- DOE is also in the process of seeking approval from the State of New Mexico for two additional disposal panels. The panels do not represent an expansion of the WIPP site but are rather infrastructure investments that will allow WIPP to meet its full mission and capacity as envisioned by the Land Withdrawal Act. Additionally, these panels will allow for increased shipments and operations, reducing the waste currently stored at generator sites.

Question: Mr. White, does the fiscal year 2023 budget request include all funding necessary to get WIPP back up to running at full capacity as soon as possible or is there work that could be accelerated with additional funding?

Answer: The request for increased funding in FY2023 reflects this Administration's strong commitment to fulfilling DOE's cleanup responsibilities in communities that historically supported or still support defense weapons programs and government-sponsored nuclear research.

- The FY2023 request supports:

- Continued facility operations, as well as operation of waste characterization and transportation programs.
- Transportation activities from multiple locations required for sustained operations at a rate of up to 12-17 shipments per week.
- Continued infrastructure recapitalization projects as well as mine modernization activities and safety upgrades.

Question: Mr. White, are there any open issues with the State of New Mexico, such as any regulatory actions needed now or in the near future or any outstanding lawsuits or other legal issues that need to be resolved?

Answer: The Department is awaiting the New Mexico Environment Department's decision on WIPP's permit renewal application and permit modification request. We expect a final decision by late 2023.

Assistant Secretary's or Designee's
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Reviewed by: Carlsbad Field Office, 7/25/22

Congresswoman Susie Lee

8. Environmental Management in Nevada (EM)

Nevada has a long, and often troubled, history with our country's nuclear weapons and nuclear waste programs. Reasonably, my constituents continue to worry about nuclear waste and contamination in our state, and it's essential that we continue to improve our state's relationship with DOE through transparent communication and tangible results to rebuild trust.

To that end, I'm interested in hearing an update on the Office of Environmental Management's Nevada Program. DOE and its primary contractor for the Nevada Program, Navarro Research and Engineering, have reported steady progress in managing, monitoring, and decontaminating radioactive waste.

I welcomed the news that EM Nevada has completed 75% of its groundwater mission at the Nevada National Security Site, ahead of schedule and under budget. I was also impressed by the NNSS environmental management team's diligent work during my visit to the site in February. But I would appreciate an update, especially as it relates to the fairly new ten-year contract using the End State Contracting Model, announced by DOE and Navarro in 2020.

Question:

- Mr. White, would you please provide an update on EM's Nevada Program? How will the \$62.6 million request for FY23—a nearly \$2 million increase—drive this mission forward safely and on time?

Answer: The FY23 request will support continued work toward completion of EM's remaining environmental restoration projects at the Nevada National Security Site (NNSS). Specifically, the request will advance ongoing investigatory work at Pahute Mesa, the fourth and final groundwater region at the NNSS, which will ultimately support regulatory approval of the corrective action plan. The request will also support demolition activities at two large legacy nuclear facilities at the NNSS – the Test Cell C and Engine Maintenance, Assembly and Disassembly complexes.

Assistant Secretary's or Designee's
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Reviewed by: K. Knapp, NNSS, 7/25/22

Question:

- Would you comment on the End State Contracting Model's progress so far in achieving its goals of reducing risk and environmental liability while accelerating the mission's completion and closure?

Answer: Using the End State Contracting Model (ESCM) is enabling the EM Nevada Program to effectively segment the planning and execution of work. Segmenting work, via the task order process, supports the Department's ability to adequately characterize the work and appropriately price the follow-on cleanup.

Although it is relatively early in EM's implementation of the ESCM in Nevada, the ESCM is fostering critical discussions and partnering with the contractor to proactively scope, schedule, and fund work with consideration of safety, workforce retention, and execution of effective solutions.

Assistant Secretary's or Designee's
Name/Date: I. White, Senior Advisor, 8/3/22

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Reviewed by: EMCBC, 7/28/22

Congressman Kilmer

9. Hanford Cleanup (EM)

Mr. White, thank you for referencing the Office's work on the Hanford site in your testimony, where you mentioned that you are treating radioactive and chemical waste from large underground tanks for the first time ever on a large scale, as well as preparing to launch the Direct Feed Low Activity Waste (DFLAW) project.

I and the Washington Delegation—including members from both parties—understand and value this work immensely. We all want to protect our families, farms, fish, and more, who remain at risk from the Hanford site, which as you know was where the federal government developed nuclear defense assets beginning with World War II and on through the Cold War years. Today over 50 square miles of groundwater are contaminated above federal standards, 300 buildings are contaminated, there are over 10,000 stored waste containers, and more at the site, all of which threaten Washingtonians' health and safety.

We noticed that the President's Budget Request for FY23 includes a 14% cut for Richland Operations and a 2.5% cut for the Office of River Protection relative to FY22 for the Hanford site. I am concerned that these cuts are coming right as we enter the next critical stage of cleanup for the site—treating tank waste at scale.

Question:

- Will you commit to working with me and the Washington Delegation to keep the Hanford site cleanup on track?

Answer: Yes. DOE will continue working with the Washington Delegation, unions, Tribal Nations, local communities, regulators, employees, and Congress to execute the safe and effective cleanup of the Hanford site, while evaluating opportunities to accelerate the mission.

Question:

- Is there anything further you and the Office of Environmental Management needs from this Committee or Congress related to the Hanford site?

Answer: DOE appreciates the continued support of the Committee and Congress. DOE will continue working with Congress to ensure that the resources and tools are in place to support effective cleanup at Hanford.

Assistant Secretary's or Designee's
Name/Date: I. White, Senior Advisor, 8/3/22

Preparation Team Name:
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Congressman Dan Newhouse

10. Environmental Management – Hanford Cleanup (EM)

Good afternoon, Mr. White, and thank you for being here. I will most likely have a few questions for the record, but I would like to start out with the Hanford cleanup mission. First, congratulations on the progress that is being made towards tank waste vitrification at Hanford. I had a chance to visit the site in January to witness the progress with the Tank Side Cesium Removal (TSCR) system. I do have a few questions:

The PUREX tunnel collapse several years ago was a stark reminder that there are some risks at the Hanford Site outside of the Tank Farms. Three key risk mitigation efforts are at the 324 Building, WESF, and in the 100-K Area. I noticed that your proposed budget includes steep cuts to the control points for all three of these projects.

We know that beginning operations at the Direct Feed Low Activity Waste Facility will be an incredibly important milestone for the Hanford cleanup effort, but it's only a part of the total equation. Work will need to increase in at the High-Level Waste Facility, along with other important risk mitigation and remediation work. Of course, there is important cleanup work also taking places at other sites across the country.

I've been encouraged by advances in new waste form technologies over the past several years that seem to hold promise for some of the low-level wastes at Hanford. I know that in the past there have been competitions where folks like the researchers at PNNL in my district have proposed interesting new technologies that are viewed as high potential by the site and some contractors - but lack sufficient funding to move forward.

Question:

- At the proposed funding levels, would these important risk mitigation projects be fully funded in FY23 to meet DOE's schedule, along with Tri Party Agreement and Consent Decree milestones?

Answer: This year DOE began treating Hanford tank waste for the first time ever on an industrial scale. The Department's request builds upon that historic achievement by supporting work to begin turning tank waste into glass, while at the same time supporting ongoing risk reduction work led by the Richland Operations Office. DOE's budget request for the Richland Operations Office supports progress on placing another reactor (K-East) into interim safe storage, transferring radioactive capsules at Waste Encapsulation Storage Facility (WESF) to safer dry storage, and treating another 2 billion gallons of contaminated groundwater.

The Department remains committed to risk reduction at Hanford, including the 324 Building, WESF and the 100-K Area. In June, the Office of Management and Budget amended the budget request to include increased funds for Hanford's Central Plateau and along the River Corridor, bringing the total request to over \$2.6 billion for Hanford. The budget request would enable work at WESF, the 324 Building and in the 100 Area to remain on track and no FY23 milestones associated with those projects would be missed due to budgetary issues. Work on these risk reduction activities is in alignment with legal agreements and will progress in FY23.

DOE looks forward to working with Congress to achieve meaningful progress at Hanford while balancing other national security, energy, and environmental priorities.

Assistant Secretary's or Designee's
Name/Date: I. White, Senior Advisor, 8/3/22

Preparation Team Name:
J. Gleason, EM-5.31, 202-505-0112

Question:

- Do we need to start thinking about increasing the overall funding level for the Office of Environmental Management?

Answer: Every year the Administration and Congress evaluate how best to meet cleanup commitments at Hanford while balancing our extensive commitments at other EM sites across the nation, as well as broader national security, energy, and environmental priorities. With decades of cleanup to go and a projected lifecycle cost in the hundreds of billions, DOE is investing significantly at Hanford each year while working collaboratively with the State of Washington and the EPA to safely achieve cleanup earlier and at a practical cost.

Assistant Secretary's or Designee's
Name/Date: I. White, Senior Advisor, 8/3/22

Preparation Team Name:
J. Gleason, EM-5.31, 202-505-0112

Question:

- In FY 2021, Congress passed new authorizations in the NDAA for EM's technology development programs, but I was disappointed not to see any additional funding proposed by DOE for these programs. In fact, the request proposes cutting that program from \$30 million back down to \$25 million. Can you please give us an update on where this program stands?

Answer: Given the scale, scope and challenges of the remaining cleanup mission, it is critical to look into opportunities to develop new and innovative approaches to performing cleanup activities so that EM can safely complete its work in a more efficient and more cost-effective manner.

EM is developing an integrated technology development, demonstration, and deployment program by aligning the program with EM mission priorities and leveraging the capabilities of National Laboratories, academia, private industry and other federal agencies.

- The Technology Development program in EM will continue to tackle some of our greatest challenges with remediation of Technetium-99, Mercury, Cesium-137 and

Strontium-90, by using innovative technology solutions and approaches that will also enhance worker safety and productivity.

- EM is developing a Technology, Research & Development dashboard enterprise to monitor and evaluate results throughout the complex.
- EM is leveraging the Network of National Laboratories for Environmental Management and Stewardship to develop an R&D Roadmap that considers potential options for accelerating the Hanford tank waste mission.
- Test bed programs continue to be established by EM's technology development program at various EM cleanup sites to allow new technologies to be successfully developed and matured to meet site requirements.
- EM is expanding and enhancing the Minority Serving Institutions Partnership Program (MSIPP) to add a technology curriculum and a graduate partnership. The EM MSIPP will address DOE-EM's need for building and maintaining a well-trained, technically skilled, and diverse workforce by promoting the education and development of the next generation workforce in critical science, engineering, technology, and math (STEM), cybersecurity and additive manufacturing disciplines.
- DOE-EM is conducting a holistic technology review to evaluate technology development programs throughout the complex to ensure they have overall unity of effort. This step EM is taking will assist with visibility, effectiveness and efficiency, and will provide maximum value.
- The Hanford site has developed and field deployed technological developments including, tank visual inspection and ultrasonic testing of the Hanford tanks, single shell tank retrieval technology, and vapors detection and monitoring systems.

Assistant Secretary's or Designee's
Name/Date: I. White, Senior Advisor, 8/3/22

Preparation Team Name:
J. Gleason, EM-5.31, 202-505-0112

11. DOE Isotope Program (EM)

Mr. White – on the topic of the DOE isotope program – as you know, the Department of Energy has a history of making useful isotopes, found in its legacy materials, available for beneficial industrial purposes—including a current highly successful EM partnership with industry at Oak Ridge to utilize excess uranium-233. As you know, I believe it is important that we find and develop innovative ways to remove waste material safely and efficiently from the Hanford site.

Question: Can you provide any insight to ways that Congress may be able to help EM develop pathways of making the useful isotopes that are located at Hanford available to industry?

Answer: Consistent with congressional direction, EM is evaluating opportunities for the permanent off-site removal of radioactive capsules currently stored at Hanford. The Pacific Northwest National Laboratory is conducting the study, which is well underway. EM looks forward to reviewing the results of the study later this year and continues working in collaboration with other DOE program offices to explore potential beneficial uses of materials like these.

Assistant Secretary's or Designee's
Name/Date: I. White

Preparation Team Name:
J. Gleason, EM-5.31, 202-505-0112

Congressman Reschenthaler

12. Uranium-233 (EM)

Thorium reactors require Uranium-233 as startup fuel.

America has the world's only known inventory of this material at Oak Ridge National Lab, but we are currently destroying it.

The U-233 disposition program began in 2003, and at that time was estimated to cost \$126 million.

Nearly 20 years later, we have already spent almost \$670 million on the program, and the estimated cost has ballooned to \$938 million.

The Biden Administration requested nearly \$48 million for the U-233 Disposition Program in Fiscal Year 2023.

Question: Mr. White, how does your department justify the nearly \$1 billion that will be spent to dispose of our unique U-233 inventory? Is the material quality of our U-233 sufficient for reactor R&D purposes if we choose to end the disposition program and instead preserve the inventory to compete with China's nuclear-powered aircraft carrier program?

Answer: DOE is fulfilling its congressional mandate to dispose of the U-233 inventory stored at the Oak Ridge National Laboratory. Due to the proliferation risk, U-233 is costly to store, transport, or use. Its disposition eliminates a security risk and significantly reduces annual costs associated with keeping this material safe and secure. Removal of this material, which is currently stored in the world's oldest operating nuclear facility, will allow DOE to tear down that facility to provide more land for research or other missions.

In addition, DOE and its contractor Isotek have a contractual partnership that is enabling the beneficial use of the U-233 material. Operators are extracting Thorium-229 from the U-233 being processed and down blended, which is supporting next generation cancer treatment research.

U.S. commercial nuclear reactors use uranium as a fuel source, and the infrastructure for commercial nuclear energy is built to support reactors that use uranium. The U.S. does not currently possess the infrastructure to process or fabricate uranium/thorium fuel, and putting such infrastructure in place in the near term, including the needed technology development, would be costly and take many years. Additionally, the legacy U-233 materials stored in Oak Ridge are significantly contaminated. Without an economic driver to establish commercial

thorium fuel infrastructure in the U.S., and given the current abundance of uranium, DOE has stated that it does not believe investment in the thorium fuel cycle is warranted at this time.

Assistant Secretary's or Designee's
Name/Date: I. White, Senior Advisor, 8/3/22

Preparation Team Name:
D. Prather, EM-5.31, 202-586-8581
Reviewed by: B. Williams, OREM, 7/26/22
Concurrence: C. Hinderstein, NA, 8/3/22

Concurrences:

CI: S. Tetreault/S. Johnson, 8/8/22
CF: J. Rigby, 8/4/22/A. Shapiro, 8/9/22
GC: A. Capoferri/M. Silberstein, 8/5/22
PA: C. Troiano, 8/8/22
OP A. Foss, 8/8/22
Date Questions Received: 7/21/22

WEDNESDAY, MAY 25, 2022.

MEMBERS' DAY

Ms. KAPTUR. All right. The subcommittee will come to order as we begin our Member Day hearing. Thank you to all of our colleagues who will come before us today. We appreciate the time you have taken to prepare and be here with us. The purpose of today's hearing is to take testimony from Members on the Fiscal Year 2023 Energy and Water Appropriations Bill. And we look forward to hearing from our attendees about your priorities, including Federal programs of importance to your districts.

There are several who couldn't be here, who have submitted written testimony for the record. Today we will hear from our colleagues in 10-minute blocks with two members scheduled for each time block. Each member will have 5 minutes to testify.

[The information follows:]



Chairwoman Marcy Kaptur
Subcommittee on Energy and Water Development
FY 2023 Member Day Hearing
Opening Statement *As Prepared*
May 25, 2022

The Subcommittee will come to order as we begin our Member Day hearing. Thank you to all of our colleagues who will come before us today. We appreciate the time you have taken to be here.

The purpose of today's hearing is to take testimony from Members on the fiscal year 2023 Energy and Water appropriations bill. We look forward to hearing from our attendees about your priorities, including federal programs of importance to your Districts. There are several who couldn't be here who have submitted written testimony for the record.

Today, we will hear from our colleagues in 10-minute blocks, with two Members scheduled for each time block. Each Member will have five minutes to testify.

With that, I will turn to our Ranking Member, Mr. Simpson, for his opening remarks.

With that, I will turn to our ranking member, Mr. Simpson, for his opening remarks.

Mr. SIMPSON. Thank you, Chairwoman Kaptur. I don't have any opening remarks, except to welcome our colleagues here, and we look forward to listening to what their priorities are in this appropriation bill that we plan on writing.

Ms. KAPTUR. Wonderful. Thank you so very much to Congressman Simpson for being such a faithful attendee and leader over many, many years. Just glad to have you with us today. And of course, Ranking Member Simpson hails from Idaho, which has its own set of challenges. And I am from the Great Lakes, so we have a good partnership that we hope helps the country as we move forward with our very important bills.

Now I know that we have our first two members who are—but I don't think they are in the order that we—oh, here we go. Okay. So I want to welcome Representative Michael Cloud, who wishes to express support for funding within the Corps construction and operation and maintenance accounts.

Congressman Cloud, we welcome you, and please tell us a little bit about your district as you begin.

WEDNESDAY, MAY 25, 2022.

WITNESS

HON. MICHAEL CLOUD, A REPRESENTATIVE IN CONGRESS FROM THE DISTRICT OF COLUMBIA

Mr. CLOUD. Thank you, Chairwoman Kaptur. Thank you, Ranking Member Simpson. I want to thank you for providing us this opportunity to come before you today and speak on behalf of the priorities in our district. I have three requests for our district.

The first request is that you appropriate 157 million in port funding for the Port of Corpus Christi Channel Improvement Project. This isn't just an ask for me. It was included in the President's budget for fiscal year 2023. The Port of Corpus Christi is our Nation's largest seaport by revenue tonnage, and is the largest exporter of clean, natural gas in the United States. The Channel Improvement Project will deepen and widen the port's ship channel to accommodate larger ships. It translates into larger shipments, giving the U.S. the ability to export more to our trading partners overseas.

Two other requests that are included in the President's budget request deal with operation and maintenance funding. The first is nearly 7 million to dredge the Gulf Intracoastal Waterway Channel to Victoria. The Gulf Intracoastal Waterway stretches 1,100 miles, from Brownsville, Texas, to Saint Mark's, Florida. The Gulf Intracoastal Waterway serves as an alternative option for commerce, reducing congestion along highways and rail systems. In my district, the Port of Victoria relies on the Gulf Intracoastal Waterway to transport goods like steel, agricultural goods, and energy to other states. Regular dredging of this channel is crucial for business in my district.

Finally, I would like the committee to include the President's request of nearly 8 million for the Matagorda Ship Channel. This

ship channel specializes in the transportation of petrochemical products and agricultural fertilizer. The drafts and wave patterns vary considerably across the ship channel, impairing the ship channel's navigation and increasing the need for regular dredging on this channel.

Our ports, as you know, serve as the gateway to fuel, fertilizer, and other critical resources, not only for our district and state, but for the entire Nation. And as electricity and fuel prices increase in the United States and around the world, our ports stand ready to be a part of the solution in this unprecedented time.

It is important that this year's Energy and Water appropriations bill recognize the importance of our ports through thoughtful investment. I hope that the committee will include my three requests in this year's bill.

And I yield back the balance of my time. And thank you, again, for allowing us to come before you today.

[The information follows:]

Member Day Testimony
House Appropriations Subcommittee
Energy and Water Appropriations Subcommittee
May 25, 2022

- Chairwoman Kaptur and Ranking Member Simpson, I thank you both for providing me with this opportunity to speak on behalf of my priorities for this year's Energy and Water Appropriations bill.
- I have three requests.
- My first request is that you appropriate \$157 million in funding to the Port of Corpus Christi's Channel Improvement Project.
- This is not just an ask from me: it's an ask from the President, as this amount was included in the President's FY 2023 Budget Request.
- The Port of Corpus Christi is our nation's largest seaport by revenue tonnage and is the largest exporter of clean natural gas in the United States.
- The Channel Improvement Project will deepen and widen the Port's ship channel to accommodate larger ships.
- This translates into larger shipments, giving the U.S. the ability to export more to our trading partners overseas.
- Two other requests that are included in the President's Budget Request deal with operation and maintenance funding.
- The first is nearly \$7 million to dredge the Gulf Intracoastal Waterway's Channel to Victoria.
- The Gulf Intracoastal Waterway stretches 1,100 miles from Brownsville, TX to St. Marks, Florida.
- The Gulf Intracoastal Waterway serves as an alternative option for commerce, reducing congestion along highways and rail systems.

- In my district, the Port of Victoria relies on the Gulf Intracoastal Waterway to transport goods like steel, agricultural goods, and energy to other states.
- Regular dredging of this channel is crucial for businesses in my district.
- Finally, I would like for the committee to include the President's request of nearly \$8 million for the Matagorda Ship Channel.
- This ship channel specializes in the transportation of petrochemical products and agricultural fertilizer.
- The draft and wave patterns vary considerably across the ship channel, impairing the channel's navigability and increasing the need for regular dredging of the channel.
- Our ports serve as the gateway to fuel, fertilizer, and other critical resources.
- As electricity and fuel prices increase in the U.S. and around the world, our ports stand ready to respond to this unprecedented time.
- It is important that this year's Energy and Water Appropriations bill recognizes the importance of our ports through thoughtful investment.
- I hope that the Committee will include my three requests this year's bill, and I yield back the balance of my time.

Ms. KAPTUR. Thank you very much, Congressman Cloud. That is quite an impressive port to represent.

Mr. CLOUD. Yes, we are very proud of the work being done. We have made a lot of progress and excited to see this project through to completion, with your help.

Ms. KAPTUR. May I ask, do you have a lot of LNG shipments going out of your port?

Mr. CLOUD. Yes, yes. Yes, we do. For sure. Cheniere is on the port there, and we are very excited to hear President Biden mention the need for us to continue to increase capacity there. And so, yes, it is very important, the work being done there.

Ms. KAPTUR. Very good. Thank you so much. Congressman—well, if it is all right with Ranking Member Simpson, we will go to Congressman Frank Mrvan next, from Indiana's 1st District. Ah, there he is. Okay. I found you on my screen, Frank.

Mr. MRVAN. Chairwoman, I think you were muted for 1 minute.

Ms. KAPTUR. Okay. There we go. Sorry about that, having a little trouble with the audio this morning.

We will now move from the deep southwest in Corpus Christi all the way up to greater Gary, Indiana, in the far north, smack dab up against Lake Michigan. So welcome, Congressman Mrvan. Thank you for your fine work.

WEDNESDAY, MAY 25, 2022.

WITNESS

HON. FRANK J. MRVAN, A REPRESENTATIVE IN CONGRESS FROM THE DISTRICT OF COLUMBIA

Mr. MRVAN. Thank you, Chairwoman Kaptur. I would like to thank Chairwoman Kaptur and Ranking Member Simpson for holding today's Member Day hearing. I appreciate the opportunity to engage with all members of this subcommittee to advocate for the U.S. Army Corps of Engineers projects that are essential to strengthening the economy of Northwest Indiana, the entire Midwest, and our Nation.

I have the great honor and privilege of representing Indiana's 1st Congressional District. Our district serves as a center of vital road, rail, air, and port networks in the Great Lakes region, and is home to major manufacturing industries. This infrastructure, in conjunction with our labor force—our labor workforce and proximity to Chicago, enables our region to attract new commercial and residential interests and talents.

Northwest Indiana is proud to have the largest concentration of steel production and the largest inland oil refinery in our country. These industries foster economic activity and provide good-paying, union jobs to thousands of workers in this district. From maintaining the Federal navigation depths in our commercial and recreational harbors to ensuring Northwest Indiana residents have clean drinking water, the U.S. Army Corps of Engineers' Chicago District stands steadfast as an unparalleled Federal partner in the effort to facilitate economic development and promote environmental stewardship in Northwest Indiana. There is no doubt the projects under the jurisdiction of the U.S. Corps of Army—the U.S.

Army Corps of Engineers serve as an economic driver in Indiana's 1st Congressional District, and I am grateful for their missions in our region.

The community project funding process demonstrates the constitutional prerogatives of the legislative branch, and I am fully appreciative of the attention this subcommittee and its staff devote to reviewing Members' requests. It is important that we provide—that we are provided the opportunity to exercise our constitutional authority to direct funding to our districts. It is incumbent for us to submit projects requests that are beyond reproach and focused on the criteria set forth by this subcommittee.

For the 1st District of Indiana, I have asked this subcommittee to appropriate 10 million in community-funded projects to the Corps' construction account for the specific purpose of undertaking environmental infrastructure projects in the Calumet region. I would note that the request amount is equal to the Chicago District's demonstrated capability for fiscal year 2023. Authorized by Section 219 of the Water Resource Development Act of 1992, the subsequent laws, environmental infrastructure projects continue to have transformational impact on my district, aiding local communities in making necessary, overdue improvements to water, sanitary sewer, and stormwater sewer infrastructure that directly impact the Great Lakes system.

These projects also serve in a primarily industrial corridor in the majority minority populations that are dealing with the legacy costs that are so common in the Midwest. These projects are indeed environmental, but I believe the investments have proven to attract capital and build an excitement and interest to attract new people and businesses to my district.

With respect to the appropriate transparency measures that the subcommittee has put in place, I would emphasize for the Calumet Region Environmental Infrastructure that the evidence of local community support is overwhelming, with local sponsors consistently contributing 25 percent of their projects' costs. These projects provide a vital benefit to residents in our district and attract new economic activity to our region.

In partnership with the Chicago District, this cost-sharing approach serves as a model of Federal-local cooperation, and consistently delivers a strong track record of proven results included, but not limited to, sanitary sewer interceptors and lines that benefit residents by reducing backups and damages to homes, improved operations of local wastewater treatment facilities, and also by eliminating inflow and infiltration of groundwater into the sewer systems, and stormwater projects constructed in areas where no previous stormwater infrastructure existed to protect homeowners from costly flooding events.

It is imperative that we build on such models of cooperation and continue to appropriately distribute Federal assistance through the annual appropriations process to communities that are depending on our leadership. Additionally, I have requested 1,914,000 in community project funding to support the Corps' operations and maintenance missions at the Michigan City Harbor, at the Burns Waterway Small Boat Harbor in Portage, respectively.

Given the 1st District's location along the south shore of Lake Michigan, recreational harbors have an integral part in economic development plans for shoreline communities. Michigan City Harbor features prominently within the Washington Park complex that is home to Michigan City Zoo and the city's publicly accessible lakefront, a 99-acre park that attracts visitors from a tristate area.

As important, Michigan City Harbor and its channel provide safe refuge for recreational boats traveling within southern Lake Michigan during adverse weather events. The U.S. Coast Guard maintains law enforcement and rescue vessels within that port. Improving the navigable waterway within the harbor and channel will improve the USCG's access to and from the port to conduct its Homeland Security missions on Lake Michigan.

Similarly, Burns Waterway Small Boat Harbor supports economic development within the city of Portage, driven by its proximity to Lake Michigan and the Indiana Dunes National Park. The availability of this harbor allows the city to pursue commercial and recreational plans that tie into the waterway and natural environment. Along with Michigan City Harbor, Burns Waterway Small Boat Harbor and its channel provide safe refuge for recreational boats traveling within southern Lake Michigan during the adverse weather events as nearby commercial harbors such as Burns Waterway Harbor, Gary Harbor, and Indiana Harbor do not have facilities for these protection of recreational boats during intense thunderstorms or other weather conditions that affect navigable within—navigability within Lake Michigan.

To the immediate south of both harbors, the Northern Indiana Commuter Transportation District is constructing its double tracking project, a \$640 million project with substantial investments made by the Federal and state governments. The transit-oriented development along the rail line, which connects Portage and Michigan City, focuses upon the accessibility to Lake Michigan via multiple methods of transportation, including waterways. Requested funds will allow the Chicago District to address the needs of the Michigan City and Burns Waterway Harbor.

Ms. KAPTUR. Will the gentleman kindly summarize, as we move forward?

Mr. MRVAN. Yes. In closing, Chairwoman Kaptur and Ranking Member Simpson and all the members of this subcommittee, I thank you for your consideration and the opportunity to share with you. And I appreciate all important issues that I talked about, your consideration for funding.

[The information follows:]

Testimony of the Honorable Frank J. Mrvan, U.S. Representative, IN-01 House Appropriations
Subcommittee on Energy and Water Development May 17, 2022

I would like to thank Chairwoman Kaptur and Ranking Member Simpson for holding today's Member Day hearing. I appreciate the opportunity to engage with all members of this Subcommittee and advocate for U.S. Army Corps of Engineers projects that are essential to strengthening the economy of Northwest Indiana, the entire Midwest, and our nation.

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With respect to the appropriate transparency measures that this Subcommittee has put in place, I would emphasize for the Calumet Region Environmental Infrastructure that the evidence of local community support is overwhelming, with local sponsors consistently contributing 25 percent of their projects' costs. These projects provide a vital benefit to residents in our district

and attract new economic activity to our region. In partnership with the Chicago District, this cost-sharing approach serves as a model of federal-local cooperation and consistently delivers a strong track-record of proven results, included, but not limited to: sanitary sewer interceptors and lines that benefit residents by reducing backups and damages to homes; improved operations of local wastewater treatment facilities by eliminating inflow and infiltration of groundwater into sewer systems; and stormwater projects constructed in areas where no previous stormwater infrastructure existed to protect homeowners from costly flooding events. It is imperative that we build on such models of cooperation and continue to appropriately distribute federal assistance through the annual appropriations process to communities that are depending on our leadership.

Additionally, I have requested \$1 million and \$914,000 in Community Project Funding to support the Corps' operations and maintenance missions at the Michigan City Harbor and at the Burns Waterway Small Boat Harbor, in Portage, respectively. Given the First District's location along the south shore of Lake Michigan, recreational harbors have an integral role in the economic development plans for shoreline communities. Michigan City Harbor features prominently within the Washington Park complex that is home to the Michigan City Zoo and the city's publicly accessible lakefront, a 99-acre park that attracts visitors from the tri-state area. As important, Michigan City Harbor and its channel provide safe refuge for recreational boats traveling within southern Lake Michigan during adverse weather events. The U.S. Coast Guard (USCG) maintains law enforcement and rescue vessels within the port; improving the navigable waterway within the harbor and channel will improve the USCG's access to and from the port to conduct its Homeland Security missions on Lake Michigan.

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Park. The availability of this harbor allows the city to pursue commercial and recreational plans that tie into the waterway and the natural environment. Along with Michigan City Harbor, Burns Waterway Small Boat Harbor and its channel provide safe refuge for recreational boats traveling within southern Lake Michigan during adverse weather events as nearby commercial harbors such as Burns Waterway Harbor, Gary Harbor and Indiana Harbor do not have facilities for the protection of recreational boats during intense thunderstorms or other weather conditions that affect navigability within Lake Michigan. To the immediate south of both harbors, the Northern Indiana Commuter Transportation District is constructing its Double Track project, a \$649 million project with substantial investments made by the federal and state governments. The transit-oriented development along this rail line, which connects Portage and Michigan City, focuses upon the accessibility to Lake Michigan via multiple methods of transportation, including waterways. Requested funds will allow the Chicago District to address the needs of the Michigan City and Burns Waterway Small Boat Harbors within its authorized missions and will support Portage and Michigan City in their efforts to maximize economic development opportunities attracted to this region resulting from these federal investments.

In closing, Chairwoman Kaptur, Ranking Member Simpson, and all members of this Subcommittee, I thank you for your consideration and for the opportunity to share with you the importance of these worthwhile projects to Northwest Indiana. The work of this Subcommittee, and that of the House Appropriations Committee, leads to federal investments that have the power to transform the economies of local communities and improve the quality of life and place for those who entrust in us the responsibilities inherent of Members of Congress as we work in a collaborative and productive manner on behalf of all the American people.

Ms. KAPTUR. Thank you. Thank you very much. You are such an engaged member, Congressman Mrvan. We really appreciate all you are doing, and understanding your part of the country.

I will mention, since we have several Members on the line, one of the most interesting inventions I have seen of late, was the head of—the name of our committee is Energy and Water, and generally people either testify on energy or water. But if you go to the D.C. Water Treatment Plant, you will see something that will blow your mind. They have actually put an electric circuit in the sewer. You mentioned sewers and challenges near Lake Michigan at Gary. And they are actually drawing up constant power, year round, at the D.C. water facility using a thermal heat exchanger. Because I had never thought about this, the average temperature in the sewer is 53 to 75 degrees, constant, year round, which means we are wasting all that thermal energy.

So science is leading us forward with inventions like that, and they are using it to power their building, which is a new facility that sits on top of the wastewater treatment plant in the city of Washington, D.C., which serves a region of over 2 million people.

So I just mention that to you, because I find this committee very exciting. I stumble over things like that all the time, but I share it with all the members who are listening.

Mr. MRVAN. Chairwoman, you are muted for 1 second. I think it popped off again.

Ms. KAPTUR. You know what? This is so odd, it just keeps popping on and off. So, you are welcome to listen to the rest of the hearing, Congressman Mrvan. We will pay close attention to your testimony.

Congressman Simpson, do you have any questions of either Congressman?

Mr. SIMPSON. No I don't. Just thank them for their testimony. I look forward to working with them.

Ms. KAPTUR. All right. Thank you.

Mr. MRVAN. Thank you, Chairwoman.

Ms. KAPTUR. Thank you very much. Thank you so very much for participating.

Now we are going to move to Representative Rick Allen. I thank him for waiting, from the 12th District of Georgia. I want to make sure our audio is on.

Mr. ALLEN. Can you hear me okay?

Ms. KAPTUR. I can hear you okay. Welcome. Thank you so very much.

Mr. ALLEN. Well, thank you, Chairman Kaptur and Ranking Member Simpson. And, Mr. Simpson, congratulations on your recent win. We had a big win in Georgia last night.

Mr. SIMPSON. Thank you.

Mr. ALLEN. I am glad it is behind us.

Mr. SIMPSON. Indeed.

WEDNESDAY, MAY 25, 2022.

WITNESS

HON. RICK W. ALLEN, A REPRESENTATIVE IN CONGRESS FROM THE DISTRICT OF COLUMBIA

Mr. ALLEN. Anyway, I want to thank the committee for allowing me to provide this testimony and highlight issues that are critical to our 12th District of Georgia. My district is home to many constituents that work at the Savannah River site, a Department of Energy environmental management site, right across the river in South Carolina. Specifically, the Savannah River site is home to many critical missions through the National Nuclear Security Administration, the NNSA, including operations at the plutonium processing facility and the Savannah River Tritium Enterprise, which prepares the Nation's only tritium supply for our national defense, which is in recent months we have—we understand how critical that mission is.

Further, the Savannah River site is home to H-Canyon, the Nation's only hard nuclear chemical separations facility; the salt waste processing facility; the Savannah River National Laboratory, which does incredible work; and environmental cleanup, to mention just a few.

To ensure that the site risk management operations can proceed uninterrupted, especially H-Canyon's mission of safely processing highly radioactive materials, I request that the subcommittee fund this account at a total of 501,994,000 for the fiscal year 2023.

I also ask that the subcommittee fund a total of 82 million for plutonium operations, and 700 million for the plutonium processing facility for nuclear modernization and nonproliferation at the Savannah River site. The Savannah River site has repeatedly answered the call to safeguard our national security, and we must continue to support this critical mission and modernize our nuclear inventory.

Additionally, I would be remiss if I did not mention an issue important to my district and, obviously, Congressman Joe Wilson's district, the new Savannah Bluff Lock and Dam. This is a bicameral, bipartisan endeavor. It is been around since 1930. While it is currently caught up in the courts, it is critical that any further appropriations legislation reinforce Congress' interest in maintaining the current water levels upstream of the new Savannah Bluff Lock and Dam, while encouraging the Army Corps of Engineers to work with local authorities to find an acceptable solution for the environmental mitigation required as part of the now completed Savannah Harbor Expansion Project. And thank you for that as well. It is now the third largest port in the country. Specifically, any resolution must ensure that existing water levels are maintained as required in Section 1319 of the WIIN Act of 2016.

I look forward to working with your committee in the future on this important issue. I want to thank the House Appropriations Committee for your work, and I look forward to working with you on these issues vitally important to Georgia's 12th District.

And I appreciate the opportunity to submit my report. Thank you very much.

[The information follows:]

- I want to thank the committee for allowing me to provide this testimony and highlight issues that are critical to the 12th Congressional District of Georgia.
- My district is home to many constituents that work at the Savannah River Site, a Department of Energy Environmental Management site right across the river in South Carolina.
- Specifically, the Savannah River Site is home to many critical missions through the National Nuclear Security Administration (NNSA) including operations at the Plutonium Processing Facility and the Savannah River Tritium Enterprise, which prepares the nation's only tritium supply for our national defense.
- Further, the Savannah River Site is home to H-Canyon, the nation's only hardened nuclear chemical separations facility, the Salt Waste Processing Facility, the Savannah River National Laboratory, and environmental clean-up, to mention a few.

- To ensure that the Site Risk Management Operations can proceed uninterrupted, especially H-Canyon's mission of safely processing highly radioactive materials, I request that the subcommittee fund this account at a total of \$501,994,000 for Fiscal Year 2023.
- I also ask that the subcommittee fund a total of \$82 million for Plutonium operations and \$700 million for the Plutonium Processing Facility for nuclear modernization and nonproliferation at the Savannah River Site.
- The Savannah River Site has repeatedly answered the call to safeguard our national security, and we must continue to support this critical mission and modernize our nuclear inventory.
- Additionally, I would be remiss if I did not mention an issue important to my district- the New Savannah Bluff Lock and Dam.
- While it is currently caught up in the courts, it is critical that any future appropriations legislation reinforce Congress' interest in maintaining current water levels upstream of the New Savannah

Bluff Lock and Dam, while encouraging the Army Corps of Engineers to work with the local authorities to find an acceptable solution for the environmental mitigation required as part of the now completed Savannah Harbor Expansion Project.

- Specifically, any resolution must ensure that existing water levels are maintained, as required in section 1319 of the WIIN Act of 2016.
- I look forward to working with your committee in the future on this important issue.
- I want to thank the House Appropriations Committee for their work, and I look forward to working with them on these issues vitally important to Georgia's 12th District.
- I appreciate the opportunity to submit my input.

Ms. KAPTUR. Thank you, Congressman Allen, very much for your testimony and for being a strong voice for Savannah and for Savannah's coast and river. We have to visit your site.

Mr. ALLEN. Yes.

Ms. KAPTUR. I don't know if our ranking member has been there or not, but I think some of these——

Mr. ALLEN. Please do.

Ms. KAPTUR [continuing]. Gulf sites are really phenomenal. And your leadership is very, very important.

I was just looking down the agenda we have now had thus far. We are going to move to Congresswoman Porter of California from the 45th, 45th District, think about that, of California. But we have had, in addition to Idaho, Ohio, we have had on for testimony this morning already Texas, New Jersey, Indiana, and now we move to California. Truly, this is a subcommittee that covers the country and we are thrilled to have Congresswoman Katie Porter. Please, this is your moment.

WEDNESDAY, MAY 25, 2022.

WITNESS

HON. KATIE PORTER, A REPRESENTATIVE IN CONGRESS FROM THE DISTRICT OF COLUMBIA

Ms. PORTER. Thank you very much, Chair Kaptur and Ranking Member Simpson, for the opportunity to testify today. As you consider our request for the Energy and Water Development Subcommittee's Fiscal Year 2023 Appropriations Bill, that is a mouthful, as you consider your work, I urge you to consider my bipartisan request for additional funding for the Department of Energy's efforts to locate abandoned oil and gas wells across the country. This funding will help the Department of Energy work with Federal land management agencies, states, and Indian Tribes to identify orphaned wells that are leaking toxic gases into the surrounding communities or pose other health hazards.

The Environmental Protection Agency estimates that there are over 2 million unplugged wells polluting communities around the country. The Environmental Defense Fund has produced a map of the unplugged documented wells across the country. And of the ones we know about, there are 82,000 wells that have been documented and many of those documented wells are concentrated in Southern California, the area that I represent and where I live with my three children. Many of the documented wells are also concentrated in Appalachia.

Importantly, the map that we have from the Environmental Defense Fund only shows documented wells. It does not include the hundreds of thousands of wells that we have not found yet. The Bipartisan Infrastructure Investment and Jobs Act provided nearly \$5 billion in funding to create a new Federal program to address the longstanding problem of unplugged wells. This is an historic investment to address this environmental harm, however, the law only provides \$30 million for the Department of Energy to identify and mitigate the environmental risk of undocumented orphan wells.

My colleagues on the House Natural Resource Committee and I have studied this issue very closely. In March, the House Natural Resources Subcommittee on Energy and Mineral Resources, where I serve, had a hearing on this topic. We heard from a witness in the hearing that the \$30 million provided by Congress in the Bipartisan Infrastructure Law was not nearly enough to locate all of the undocumented orphan wells across the country. That is why I, along with my colleague, Representative Liam of Pennsylvania, have requested that Congress appropriate not less than \$30 million for the Department of Energy to help locate these wells. The unfortunate truth is that even with the historic funding that Congress has already passed, we will need to invest much more in the years to come to find and plug all of the orphan wells that are damaging our communities.

Besides the abundant public health benefits from reducing exposure to methane and toxic gases, plugging or capping leaking wells is critical in our fight to reduce the emissions that contribute to climate change. Methane is a potent greenhouse gas which, as we know according to the EPA, is more than 25 times as potent as carbon dioxide is at trapping heat in the atmosphere. Due to human activities, atmospheric methane has more than doubled in the past 200 years. There are many ways to lower our methane emissions, but capping wells is one promising step that we could take that would improve the health of our communities.

But before we can plug these wells, we have to find them. So, the additional funding that I am requesting will go to laboratories like Lawrence Livermore National Laboratory, and the Lawrence Berkeley National Laboratory in Northern California. They have the scientists, the data, and the expert technology to help us identify orphan wells. This is a smart investment for our country and I urge you to give the Department of Energy adequate funding to support this work.

Thank you, again, for the opportunity to testify today and I yield back.

[The information follows:]

Statement of Representative Katie Porter (CA-45)
House Committee on Appropriations
Subcommittee on Energy and Water Development Members' Day
May 25, 2022

Thank you, Chair Kaptur and Ranking Member Simpson, for the opportunity to testify today.

As you consider our requests for the Energy and Water Development Subcommittee's Fiscal Year 2023 appropriations bill, I urge you to consider my bipartisan request for additional funding for the Department of Energy (DOE)'s efforts to locate abandoned oil and gas wells across the country. This funding will allow DOE to help federal land management agencies, states, and Indian tribes identify orphaned wells that are leaking toxic gases into the surrounding communities. The Environmental Protection Agency estimates that there are over 2 million unplugged wells polluting communities around the country.

The Environmental Defense Fund produced a map of the unplugged, documented wells across the country. There are 82,000 wells that are documented on this map.¹ Many documented wells are concentrated in Southern California, where I live with my three children. As you can see, many documented wells are also concentrated in Appalachia. However, this map only shows documented wells. For obvious reasons, it does not include the wells we have not found yet.

The bipartisan Infrastructure Investment and Jobs Act provided nearly \$5 billion in funding to create a new federal program to address these unplugged wells. This is a historic investment to address a long-standing environmental harm. However, the law only provides \$30 million for the Department of Energy to identify and mitigate the environmental risks of undocumented orphaned wells.

My colleagues on the Natural Resources Committee and I have studied this issue closely. In March, the House Natural Resources Subcommittee on Energy and Mineral Resources held a hearing on this topic. We heard from a witness in that hearing that the \$30 million provided by Congress in the Bipartisan Infrastructure Law was not nearly enough to locate all of the undocumented orphan wells across the country.

That is why I, along with my colleague Representative Lamb of Pennsylvania, have requested that Congress appropriate not less than \$30 million for the Department of Energy to help locate these wells. The unfortunate truth is that even with the historic funding Congress has already passed to address unplugged wells, we will need to invest much more in the years to come to find and plug all of the orphan wells that are leaking in our communities.

Besides the abundant public health benefits from reducing exposure to methane and toxic gases, plugging or capping leaking wells is critical in our fight to reduce the emissions that contribute to climate change. Methane is a potent greenhouse gas which, according to the US Environmental Protection Agency, is more than 25 times as potent as carbon dioxide at trapping

¹ Environmental Defense Fund, "Orphan Well Map." Retrieved from: <https://www.edf.org/orphanwellmap>

heat in the atmosphere. Due to human activities, atmospheric methane has more than doubled in the past two hundred years.² While there are many ways to lower our methane emissions, capping wells is one promising step we could take that would also improve the health of our communities.

Before we can plug these wells, however, we have to find them. This additional funding will go to labs like Lawrence Livermore National Laboratory and Lawrence Berkeley National Laboratory in Northern California who have the scientists, data, and expert technology to help identify orphaned wells. This is a smart investment for our country. I urge you to give the Department of Energy the funding needed to support this effort.

Thank you again for the opportunity to testify today. I am happy to answer any questions.

² US EPA, "Importance of Methane". Retrieved from:
<https://www.epa.gov/gmi/importance-methane#:~:text=Methane%20is%20the%20second%20most,trapping%20heat%20in%20the%20atmosphere>.

Ms. KAPTUR. Thank you very much, Congresswoman Porter. I do have a question. Obviously, you have worked with the Interior Committee, Natural Resources Committee on the authorizing side and I don't know about the appropriations side with Congresswoman Pingree, but orphan wells have not traditionally been a part of the mandate of the Department of Energy itself. So, we will take your very important proposal under consideration, but I think that we also have to check with our colleagues on these other committees and subcommittees to make sure we are not interfering in their jurisdiction.

Ms. PORTER. May I respond, Chair Kaptur?

Ms. KAPTUR. Please.

Ms. PORTER. So, I think the rule here is that the capping and the mitigation work is done elsewhere, but the identification work is where the Department of Energy has a role to play and that is specifically what I am asking for. So, once these wells are identified, then the work of mitigating them and deciding whether they fit into the Abandoned Well Program is done elsewhere, but it is DOE and the laboratories that the Department of Energy funds, like the Berkeley National Laboratory here in California, like Livermore National Laboratory, that uses technology to identify the sources of methane emission. So, it is their technology, their data, and their scientists that can help us find these leaking energy sources and then the work of actually mitigating the orphan wells is done by other agencies. You are absolutely correct about that. So, I just wanted to be clear about the distinction.

I am supporting us finding these wells and I think the strategies and the priorities for which ones we plug and what order and how we tackle them is the work of our other agencies that are under the umbrella of Natural Resources. Does that help, Chair?

Ms. KAPTUR. Thank you. Congressman Simpson, do you have any questions?

Mr. SIMPSON. Well, first of all, I would just like to thank Congressman Allen for his recognition of the importance of Savannah River. It is one of the really important labs in this country. I have been down there several times, and they do great work down there and we need to make sure our laboratories are funded.

As far as your question relative to the abandoned wells, I have the same question that you do, whether we expand the role of DOE or whether that is property of the Department of the Interior and the EPA. There is an Abandoned Mines Program, Abandoned Wells, and all that kind of stuff and oftentimes, they will use resources from the national labs that work for other sort of programs to help where they can. I don't know that I want to start a whole new program within the Department of Energy rather than reinforce the program that is currently there to do this job, if you understand what I am saying.

Not opposed to what we are trying to do to identify these abandoned wells and so forth, and identify them and cap them, but I just wonder about the process that we are advocating here rather than the process that is already in place.

Ms. KAPTUR. Thank you.

Ms. PORTER. May I respond? May I treat that as a question, Madam Chair?

Ms. KAPTUR. Please.

Ms. PORTER. So, I appreciate that, Ranking Member Simpson, and I think the reason that we are making this funding, that Mr. Liam and I are making this request is that we have heard in our relevant committees and in our communities that the appropriate entity here is actually the Department of Energy. As you know, we made a very generous and significant appropriation of \$5 billion toward the cleanup costs. But in order to make those tax dollars work effectively, we want to make sure that we are plugging the wells that are at most risk of contamination, at most of risk of public harm, at most risk of leaking methane or other dangerous gases.

So it absolutely is the Department of Energy. This program that the Department of Energy is running, this work that they are doing, already exists. We are not asking for the creation of a new program. We are asking to up the funding of an existing program and I will follow up with staff to provide more information in that regard.

But I absolutely agree. We have existing programs. The point of this request is to make sure that they are working effectively for taxpayers.

Ms. KAPTUR. All right. I think this was a very valuable discussion and I want to thank the congresswoman for her leadership on this important point and we have clearly heard about the impact of methane on the environment. And we thank you for your testimony today. We will work with your staff and with the other committee staffs to move this concept forward. Thank you very much.

Now, I want to thank Congressman Van Drew from the 2nd District of New Jersey. Now keep in mind, Congressman Van Drew, we just heard from the 45th District of California. We move to the 2nd District of New Jersey. And you were the first one up this morning, I think, waiting in line. We thank you so very much and we welcome to the subcommittee. We welcome you back.

WEDNESDAY, MAY 25, 2022.

WITNESS

**HON. JEFFERSON VAN DREW, A REPRESENTATIVE IN CONGRESS
FROM THE DISTRICT OF COLUMBIA**

Mr. VAN DREW. Thank you, Chairwoman, and it is good to be back. And thank you for the work that you are doing and the ranking member is doing, both of you together.

Today is an important day and I want to thank you for holding the meeting so that people can truly express the needs that they have on energy and water. My district of Southern New Jersey has over 150 miles of shoreline and half a dozen rivers. Our community's way of life depends on the Army Corps of Engineers keeping our waterways clear and keeping them safe. The subcommittee plays a critical role in funding the many vital projects that the Army Corps implements in the State of New Jersey.

I appear before the subcommittee to advocate for community project funding from the construction account for the authorized construction project Barnegat Inlet to Little Egg Inlet, New Jersey. And this has been authorized already. The funding will be used by

the U.S. Army Corps of Engineers, Philadelphia District, to improve a Coastal Storm Risk Management Project that is currently behind schedule, unfortunately. This project will renourish protected beaches along the 18 miles of the Jersey Shore that constitutes the community of Long Beach Island, also known as LBI.

In October of 2012, Hurricane Sandy caused significant damage to LBI. This included, but it wasn't limited to, damage to homes, infrastructure, and beaches. The Hurricane Sandy Reevaluation Report recommended a Coastal Storm Risk Management Beach Project on LBI for which construction initiated in 2015 and completed in 2017. The Coastal Storm Risk Management Project was designed to receive nourishment at a 7-year interval relative to the start date in 2015. The first periodic nourishment was scheduled for fiscal year 2022, but funding was not provided. The project is in the same situation for fiscal year 2023.

Without community project funding, this project will struggle to move forward with the preplanned renourishment and the LBI community will suffer for it. This project has universal support from the community, bipartisan support, universal support. The community desperately wants and needs this project to be implemented. This project is both a key resilience project and an economic driver.

This is an established Coastal Storm Risk Project in an area which regularly experiences dangerous storm events. Without the beach to absorb wind and wave action, the risks of flooding and damage are considerably increased, as we all know. Many areas of this project are completely eroded right up to the dunes providing little or no protection and rendering the beach virtually unusable during any type of a high tide. Failure to complete the project will place the community in danger and impose detrimental economic impacts on the multibillion-dollar shore tourism industry on which this region severely depends.

This authorized project is behind schedule solely due to the lack of funding and it is strongly desired, as I said, by the community. The implementation of the project will make Jersey Shore's Long Beach Island community safer and more prosperous. It is the sort of project that community project funding is designed for. I urge the committee to provide the full requested amount of \$32 million to the United States Army Corps of Engineers in the Philadelphia District.

I, again, thank you very much, Chairwoman Kaptur, Ranking Member Simpson, and the entire Appropriation Subcommittee on Energy and Water for providing me the opportunity to testify on this vital resilience project. Thank you for your consideration of this request and I yield back.

[The information follows:]

Rep. Van Drew Energy and Water Testimony

Good Morning Chairwoman Kaptur and Ranking Member Simpson and thank you for holding today's member day hearing of the House Appropriations Subcommittee on Energy and Water. My district of Southern New Jersey has over 150 miles of shoreline and half a dozen rivers. Our community's way of life depends on the Army Corps keeping our waterways clear and safe. This subcommittee plays a critical role in funding the many vital projects that the Army Corps implements in New Jersey.

I appear before the subcommittee to advocate for Community Project Funding from the construction account for the authorized construction project, "Barnegat Inlet to Little Egg Inlet, NJ." This funding will be used by the U.S. Army Corps of Engineers Philadelphia District to implement a coastal storm risk management project that is currently behind schedule. This project will renourish protective beach along the 18 miles of the Jersey Shore that constitute the community of Long Beach Island, also known as LBI.

In October of 2012 Hurricane Sandy caused significant damage to LBI. This included but was not limited to damage to homes, infrastructure, and beaches. The Hurricane Sandy Revaluation Report recommended a Coastal Storm Risk Management beach project on LBI, for which construction initiated in 2015 and completed in 2017.

The Coastal Storm Risk Management Project was designed to receive re-nourishment at 7-year interval relative to the start-date in 2015. The first periodic nourishment was scheduled for FY22, but funding was not provided. The project is in the same situation for FY23. Without community project funding this project will struggle to move forward with the pre-planned re-nourishment, and the LBI community will suffer for it.

This project has universal support from the community. The community desperately wants and needs this project to be implemented. This project is both a key resilience project and an economic driver.

This is an established Coastal Storm Risk Management project in an area which regularly experiences dangerous storm events. Without the beach to absorb wind and wave action the risks of flooding and damage are considerably increased. Many areas of this project are completely eroded up to the dunes, providing little to no protection and rendering the beach virtually unusable during high tide. Failure to complete the project will place the community in danger and impose detrimental economic impacts on the multi-billion-dollar Jersey Shore tourism industry on which the region depends.

This authorized project is behind schedule solely due to lack of funding, and is strongly desired by the community. The

implementation of this project will make the Jersey Shore/Long Beach Island community safer and more prosperous. It is the sort of project that community project funding is designed for. I urge the committee to provide the full requested amount of \$32 million to the U.S. Army Corps of Engineers Philadelphia District.

I again thank Chairwoman Kaptur, Ranking Member Simpson, and the entire Appropriations Subcommittee on Energy and Water for providing the opportunity to testify on this vital resilience project. Thank you for your consideration of this request.

Ms. KAPTUR. Thank you very much, Congressman Van Drew, and thank you for waiting. We appreciate your testimony this morning and, you know, looking at a map, just west of the bay inlet sits Wilmington, Delaware.

Mr. VAN DREW. Yes.

Ms. KAPTUR. I was looking at the map. Oh, my, you know, it is just a very interesting part of the country and I don't know if you have any of those oyster beds that they have put up in different—

Mr. VAN DREW. I do like them. Just as a point of interest, I have, geographically, the largest district in the State of New Jersey. So, I have about 40-some percent of the state geographically. So, I have multiple counties, I have 93 towns, and sometimes—my daughter lives in Wilmington and it takes just about as long to visit her and come home as it does when I go to parts of Salem County, which are right next to Wilmington.

Ms. KAPTUR. Right. You can't take a boat?

Mr. VAN DREW. You actually can, but it is almost longer. So, there is a lot of interesting issues and discussions with that, too, getting from the very southern tip of New Jersey to Delaware, and some people have talked about a bridge. That would be extremely expensive and so, basically, we have a ferry system that goes back and forth.

Ms. KAPTUR. Ah, ah.

Mr. VAN DREW. That is one of the ways we can reach certain parts, like Rehoboth, Delaware, and other areas. So, we are more influenced where I am, oddly enough, rather than Manhattan and New York City, by Philadelphia and Wilmington and that whole area.

Ms. KAPTUR. One thing I love about this committee is that we actually get to know so many different parts of the country and get a better feel for the environmental conditions that are attendant to living there. So, we appreciate your testimony this morning.

And I guess we are into the afternoon here in my part of the country almost. Congressman Simpson, do you have any questions of the congressman?

Mr. SIMPSON. No. Thanks for the testimony, Congressman. And if you want to talk about how long it takes to get from one end of the district to the other, come out and visit my district in Idaho and it will take about 10, 12 hours to drive from one side to the other.

Mr. VAN DREW. I would love it. Oh, I know. I always put it in perspective. I say the largest district—you will always notice that I say in the county because I have New Jersey inside Idaho, the whole state.

Mr. SIMPSON. I feel for you.

Mr. VAN DREW. So, it is tough sometimes, as we all know, getting back and forth, you know, and trying to go to multiple events or be at multiple places. It is not always—that is why sometimes the type of remote conversation is helpful as well.

Mr. SIMPSON. Yeah. Thanks for your testimony.

Mr. VAN DREW. Thank you.

Ms. KAPTUR. Thank you very much, Congressman Van Drew. You have been a regular and I know you are working hard for your

district, so thank you. We are very proud of the bipartisan nature of this subcommittee, let me just say that.

We are going to go now to Representative Melanie Stansbury. A very different part of the country, New Mexico District 1. Welcome, Congresswoman Stansbury. Thank you for joining us.

WEDNESDAY, MAY 25, 2022.

WITNESS

**HON. MELANIE A. STANSBURY, A REPRESENTATIVE IN CONGRESS
FROM THE DISTRICT OF COLUMBIA**

Ms. STANSBURY. Thank you so much, Madam Chairwoman, and thank you, also, to the ranking member and to members of the Committee for the opportunity to present to you all today about New Mexico and about the important needs of our communities. The work of the Subcommittee on Energy and Water Development is vital to addressing the water and energy security needs of our Nation and setting our country on a path to a more climate-resilient future.

I am coming to you live from New Mexico's 1st Congressional District where our state is currently battling the worst wildfires in our state's history. And our communities are facing the worst drought in over 1,200 years. The science is clear, climate change is here and our communities are experiencing the impacts every day.

As you debate and consider the fiscal year 2023 budget, it is crucial that we not only invest in clean energy and a carbon-zero future, but that we provide our communities with the science, data, tools, and infrastructure to be more resilient in the face of this change. On the ground, our communities are experiencing the worst wildfires our state has ever seen that have burned over 300,000 acres in one fire alone, displacing thousands of families, and destroying countless homes and lands of communities that have been there for centuries, months before the fire season normally begins, driven by unseasonable winds and a historic drought. It is predicted that this fire season will not end any time soon, but will continue through the summer.

This drought is impacting our communities in unforeseen ways, Tribal communities that have lived on these lands since time immemorial, Hispanic communities that have lived here for centuries and who depend on the live-giving waters to support their farms and ranches, and countless farmers and ranchers who have been advised to curtail production as we expect the Rio Grande River to go dry this summer. I urge you to keep these realities in mind while working on the appropriations package.

In particular, this last week, I introduced a bipartisan, bicameral drought and water security package to address this issue. This comprehensive legislation which is being heard in the Senate Energy Committee will seek to address the water needs of our communities and ensure that our Tribes have access to critical infrastructure funding and reimagine the ways that we use and share data to transform water management. The Rio Grande is one of the West's most iconic rivers and provides life-giving water to millions

of people across 1,900 miles, three states, dozens of Tribes, and two countries.

The Rio Grande Water Security Act will for the first time ever create a coordinated Federal approach to working with stakeholders to address the needs of our communities and implement an Integrated Water Resources Management Plan. The funding to implement this plan will go through this committee as much of the funding will require support from the Bureau of Reclamation and Army Corps of Engineers.

In addition to providing planning infrastructure and partnerships, we must ensure that we are giving our communities the tools that they need to unlock the power of science and data to support their needs. A critical component of our water legislation package is the bipartisan Water Data Act which will empower our communities, farmers, and local governments to harness the power of data to transform water management. The bill will also provide grants to states, Tribes, and partners to support innovation and invest in next generation water data tools and technologies that will transform water use across the country.

Finally, this package also includes the reauthorization of a Pueblo Irrigation Infrastructure Grant program that is vital to our Tribal communities that was originally authorized in 2009. This funding is essential to supporting the infrastructure needs of our Tribal communities that have used these life-giving waters on the Rio Grande for cultural, agricultural, community, and ceremonial purposes since time immemorial. We must reauthorize this program and significantly increase the funding.

Taken as a whole, these bills will revolutionize water management in the time of climate change and help to equip our communities for a more climate-resilient future. I humbly ask that this committee consider adding funding for several provisions contained within this legislation, including 200 million for the Rio Grande Pueblo Irrigation Program, 25 million for the Water Data Grants Program, 15 million for the Water Data Framework, and counsel work that will be necessary to create this program and robust funding for the Rio Grande Integrated Water Resources Plan.

Further, as we all know, the WaterSMART Program under the Bureau of Reclamation is one of the most impactful programs that is helping our communities adjust to the impacts of drought and climate change and to secure their own water future. I recently introduced another piece of legislation that would make it more possible for our Tribes to use and access this funding and to leverage those investments on the ground, and I humbly ask that you consider increasing funding for the WaterSMART Program as well.

As you can consider these requests, regardless of whether you call New Mexico or Ohio or Idaho your home, we share a fundamental life-giving resource of water and it is up to all of us to ensure that our communities have equitable access to the water resources they need, and that we are investing in their future and the climate resilience of our country.

I thank you for the time and I stand for questions.

[The information follows:]

MEMBER DAY TESTIMONY
REP. STANSBURY (NM-01)
May 25, 2022

Chairwoman Kaptur and Ranking Member Simpson, thank you for the opportunity to testify here today. Under your leadership, this Committee and your staff do vital work to improve and support water management and infrastructure and energy development across the United States.

I am coming to you live from New Mexico's First Congressional District. Our state is currently battling the worst wildfire in our history as the West is facing its worst drought in over 1,200 years. I urge you to keep these concerning realities in mind as we consider the Fiscal Year 2023 appropriations. Nearly every time I speak with my constituents, New Mexicans express their deep concerns about ensuring that our water infrastructure is up to the challenge of responding to this drought and increasing climate and hydrologic change.

To this end, we are humbly requesting the inclusion of several community-driven and science-based proposals in the Fiscal Year 2023 appropriations package, which would greatly improve water infrastructure and management in New Mexico's First Congressional District.

WaterSMART Program

The WaterSMART Program under the Bureau of Reclamation is one of the most important federal programs that helps communities address drought and water security. In the face of increasing aridity across the West, this program is a key component of conserving water for our communities. That is why I joined Representative Napolitano and many of my colleagues in requesting strong funding for the WaterSMART Program at a level that will fully support long-

term sustainability and cost-effective solutions to combat severe drought and water needs of the American West.

I also introduced legislation—H.R. 6238— that allows the Secretary of the Interior to reduce or waive the non-Federal cost-share for this program for Tribes. Investing in strong funding is vital to supporting our communities in building a more resilient, self-sufficient and drought-tolerant economy in the seventeen western states.

Pueblo Irrigation Infrastructure Improvement Grants

I'd like to talk about another key program for Tribal water access in New Mexico. The Omnibus Public Land Management Act of 2009 authorized \$4 million to the Bureau of Reclamation to study irrigation infrastructure for 18 federally-recognized Pueblos in New Mexico. These Pueblos have relied on water from the Rio Grande Basin for cultural, agricultural, community, and ceremonial purposes since time immemorial. This study identified nearly \$280 million in irrigation improvements needed on Pueblo lands.

That is why I am asking the committee, and my colleagues to fund an included \$200 million for Reclamation's Pueblo Irrigation Infrastructure Improvement Grants to address the infrastructure needs of these projects, which are so vital to the economic, cultural, and environmental resilience of our Pueblo Tribal communities in the Rio Grande Basin.

Water Data and Rio Grande Water Security Acts

Last week, I introduced a bipartisan, bicameral drought and water security package that includes a reauthorization of the Rio Grande Pueblo Irrigation Infrastructure Improvement Grants. This

comprehensive water legislation will work to address the water needs of our communities, ensure our Tribes and Pueblos have access to critical water infrastructure funding, and re-imagine the ways we use and share water data.

The Rio Grande is one of the West's most iconic rivers and provides life-giving water to millions of people throughout the Basin. That is why I introduced the Rio Grande Water Security Act to create the resources needed to develop and implement an Integrated Water Resources Management Plan for the Rio Grande Basin. We must give our water managers the tools they need to improve water management, support water conservation, and increase collaboration.

While we face nearly unprecedented water challenges, our communities, water managers, and water users are forced to rely on siloed—and in many cases, outdated—water data. A critical component of our legislative package is the Water Data Act, legislation to empower communities, farmers, and local governments to harness the power of water data to transform management across the United States by establishing a national framework for sharing, integrating, and utilizing water data. Under the framework established in the Water Data Act, federal agencies with a significant role in generating or using water data will create common standards for water data to unlock the power of existing and future data for use in countless tools and technologies. The Water Data Act also codifies the Advisory Committee on Water Information of non-Federal partners to advise the process and establishes a new \$25 million grant program under the Department of Interior that invests in next-generation water data sharing tools and technology for governments, water users, non-profits, and private businesses.

These bills will revolutionize our management systems and impact millions of people across our nation. While these bills were filed after Appropriations deadlines, I would like to request this Committee consider adding in funding for several provisions contained within the legislation, including \$200 million for Rio Grande Pueblo Irrigation Infrastructure Improvement Grants, \$25 million for Water Data Grants, \$15 million for creation of the Water Data Framework and the associated Water Data Council and Advisory Committee, and robust support for a Rio Grande Basin Working Group to develop and implement a Rio Grande Basin Plan.

Thank you for consideration of these requests. Regardless of whether you call New Mexico, Ohio, or Idaho your home—we share the fundamental, life-giving resource of water, and it is up to all of us to ensure every American has equitable access to the water resources they need to thrive.

I sincerely appreciate the time and the hard work of the Committee as you consider Member priorities while drafting the FY23 Appropriations bills. I am happy to answer any questions you might have, and I yield any remaining time.

Ms. KAPTUR. Thank you, Congresswoman Stansbury, very much for your compelling testimony. As you were speaking I was thinking about my own region here, which is a freshwater region, which has no Bureau of Reclamation. And so, how different the parts of our country actually are, different cells in this living tissue we call America.

And I know you have lived in New Mexico for a while. I am sure that the change is—that the changes you were seeing have happened slowly, but nonetheless at an increasing rate. How would you explain to someone who comes from a freshwater area, and I don't expect a long answer, but to try to explain how your life has changed? Because some people where I live think water comes from the drinking fountain. They don't realize where it really comes from. How do you explain to people what is happening in your area?

Ms. STANSBURY. Well, like most of the West our water primarily comes from snowpack in the winter in the Rocky Mountains and then flows down the mountains through our irrigation systems and fields and rivers, and lasts us through the majority of the summer until monsoon season hits and gets us through the rest of the growing season. Over the last 30 years we have seen a growing trend of reduction in snowpack, which means that we are not only receiving the normal snow that we would have, but it is not packing in and then trickling out across the season, which has lowered the amount of water that is in our streams and rivers, that is available for storage, and that is available during the growing season. And we are seeing increasingly irregular weather patterns that have disrupted our monsoons, that are delivering flood waters at weird times of years, and destroying historic infrastructure that is been in place for hundreds of years.

And so, the entire system is radically disrupted by the weather climatic changes that we are seeing as a result of climate change that is having effects across every sector of our economy, our infrastructure, and the daily lives of our people.

Ms. KAPTUR. Thank you. Thank you very much for stating that on the record. We appreciate your testimony today. We have another Member from your adjoining state of Arizona who is on the line. He has been waiting a few minutes.

So, Congressman Simpson, do you have any comments or questions at this point?

Mr. SIMPSON. No. I just appreciate the testimony and if there is any way you can keep those wildfires in New Mexico, keep them there because I am afraid they are headed toward Idaho later in the year.

Ms. STANSBURY. Yeah. It is difficult, a difficult fire season. Well, thank you so much for the opportunity to testify and look forward to hearing more from the rest of the hearing.

Ms. KAPTUR. Thank you, and we look forward to working with you to help your district, to help your state, and the Nation. Thank you so much for today.

Ms. STANSBURY. Thank you.

Ms. KAPTUR. We are now going to turn to Congressman Greg Stanton. And, Congressman Stanton, I am looking for your district

number. You are number 9 in Arizona, District 9. Tell us a little bit about that and please proceed with your testimony.

WEDNESDAY, MAY 25, 2022.

WITNESS

HON. GREG STANTON, A REPRESENTATIVE IN CONGRESS FROM THE DISTRICT OF COLUMBIA

Mr. STANTON. Thank you very much, Chairwoman Kaptur and Ranking Member Simpson and members of this subcommittee. Thank you for the opportunity to testify today on the importance of Federal investments to meet Arizona's water resource needs.

The Colorado River Basin is experiencing the driest conditions in more than 1,200 years. An increasing loss of snowpack in the Rocky Mountains has led to plummeting water levels at Lake Powell. As a result, hydro-powered generation at Glen Canyon Dam is under serious threat. Lake Mead water levels are also at historic lows. Arizona's future and the future of the American Southwest depends on how we respond to this megadrought. We are moving in the right direction, but there is so much more work that needs to be done.

The current Tier 1 shortage has substantially cut Arizona's share of Colorado River water. It has reduced central Arizona projects' normal supply by 30 percent and Arizona's total Colorado River allocation by almost 20 percent. In addition to these cuts, Arizona is doing even more under the 500+ Plan, voluntarily cutting more than 200,000 acre-feet this year alone.

I appreciate this subcommittee's past support for directing resources to help us implement the Drought Contingency Plan. This is an important step. In fact, it is an essential step, but it is not enough to meet additional shortages that we face in Arizona. Arizona's Tribal nations and rural communities need help, and we must make direct investments to support their drinking water and wastewater infrastructure.

Two years ago, the Water Resources Development Act included my legislation to add Arizona to the section 595 Environmental Infrastructure Program to make these investments. With your help it was approved and in the time since more Arizona communities are getting the help they need to better protect their water supply. New water lines for the city of Maricopa and the Pascua Yaqui Tribe, infrastructure that helps Yavapai-Apache Nation better manage their reclaimed water, mitigating flood risks in the city of Flagstaff, restoring the Queen Creek in the town of Superior, the list goes on. And I appreciate this subcommittee's support for this authority this fiscal year, and I ask that you continue strong funding in the future.

Although Arizona is a dry climate, when it does rain it can rain a great deal, and we often experience dangerous flash floods. There are several projects we can support to safeguard against these floods. The Tres Rios and Rios Salado Oeste ecosystem restoration projects are part of Rio Reimagined, a Federal urban water partnership project. These projects would improve the river channel through Phoenix, better manage flood risks, as well as help remove

invasive species such as the salt cedar trees which consume large amounts of water. I hope that the subcommittee will continue to support these important projects.

Second, the Cave Buttes Dam in Maricopa County provides flood protection for more than a million people in the Phoenix metro area and \$15 billion in residential and commercial property. Seepage in the dam has sounded the alarm for us to reduce the risk of its failure. Similarly, thousands of residents and hundreds of critical facilities, including Luke Air Force Base, depend on the Agua Fria River, Trilby Wash, or the McMicken Dam for flood protection. But because of the dam's safety deficiencies, land subsidence, and urbanization, its level of protection is questionable at best. We must begin new feasibility studies for both Cave Buttes Dam and McMicken Dam so the Corps can evaluate flood risk, management needs, and safety modifications.

And finally, I request increased funds for the Sections 205 and 206 under the Continuing Authorities Program, which is currently overextended and underfunded. Arizona has several critical projects seeking to utilize this program.

Thank you for the opportunity to testify today and thank you for your support of our Nation's water infrastructure. I yield back.

[The information follows:]

Hon. Greg Stanton

AZ-09

Energy and Water Appropriations Subcommittee Member Day Hearing

Chairwoman Kaptur, Ranking Member Simpson, and members of the subcommittee, thank you for the opportunity to testify today on Arizona's water resource needs and the importance of federal investments through the U.S. Army Corps of Engineers and the Bureau of Reclamation.

Arizona has long been a leader in the United States when it comes to effectively managing water supplies – it's how we have managed to flourish in a desert climate for so long.

Climate change, though, presents us with significant challenges: temperatures rising even higher, less predictable, and consistent rain cycles, and more. These changes have left us in a prolonged drought in the Southwest. It's created more wildfires that threaten the entire state. The extreme heat wears on our water infrastructure and alters our watersheds. And heavy, intense rains combined with dry, hard ground makes many parts of our urban areas more prone to dangerous, life- and property-threatening flash floods.

We know the kind of infrastructure we need to adapt to these changes, but it requires federal investment – and your leadership. I've worked with community leaders—from small, rural, and tribal communities, as well as our major metro areas—to identify Arizona's highest priority projects to help us prepare for the challenges ahead. These projects address our water supply challenges, environmental infrastructure needs, and flood protection.

Securing our water future in Arizona depends on our ability to respond to the mega drought in the Colorado River Basin where we are experiencing the driest conditions in more than 1,200 years. Plummeting water levels at Lake Powell pose a serious threat to the city of Page's water supply and continued power generation at Glen Canyon Dam. And Lake Mead has

dropped so low that recreationists have found multiple human remains. The current Tier I shortage has resulted in a substantial cut to Arizona's share of the Colorado River, about 30% of Central Arizona Project's normal supply and nearly 18% of Arizona's total Colorado River allocation. In addition to these cuts, Arizona has agreed to even more conservation action under the 500+ plan, resulting in another 214,000-acre feet in voluntary water conservation this year. I appreciate subcommittee's past support for directing resources to help us implement the Drought Contingency Plan. This is essential, but we need to take even more action to conserve water as we face additional shortages. The Drought Contingency Plan directs the Secretary of the Interior to create or conserve 100,000 acre-feet per year or more of water in the Colorado River system to contribute to the conservation of water in Lake Mead. If the drought continues and leads to higher tier shortage declarations, which we fully expect, Arizona will see further cuts in water deliveries from the Colorado River. The Colorado River is the lifeblood of the Lower Basin States, providing water that is vital for drinking water in major urban areas including Phoenix and Tucson as well as a significant resource for tribes, agriculture, and industry. Historic dry conditions combined with the current prolonged drought and future effects of climate change will likely continue to contribute to significant economic, environmental, and other impacts throughout the basin. I urge the subcommittee to provide the Bureau with the resources it needs to fulfill its commitment under the Drought Contingency Plan.

Over the next two decades, Arizona will also need more than \$15 billion in drinking water and wastewater infrastructure needs, according to the American Society of Civil Engineers. To begin to address these needs and the fiscal constraints of our small, rural, and tribal communities to make these investments, the 2020 Water Resources Development Act included my legislation to expand the existing Section 595 environmental infrastructure program

to include the state of Arizona. Since this authority was authorized, several communities and tribal nations have received the help they need to protect their water supply. That means new water lines for the city of Maricopa and the Pascua Yaqui Tribe, infrastructure that helps the Yavapai Apache Nation use reclaimed water more efficiently, mitigating flood risk in the city of Flagstaff, and restoring the Queen Creek in the town of Superior and the list goes on. I appreciate the subcommittee's support for this authority this fiscal year and urge you to continue strong funding for environmental infrastructure so more communities and tribes in Arizona can get the assistance they need.

Although Arizona is a desert state, it is no stranger to flooding. There are several projects in need of investment to protect Arizona communities from major flood events.

First, the Cave Buttes Dam in Maricopa County provides flood protection for more than a million residents within unincorporated parts of the county as well as the cities of Phoenix, Glendale, Peoria, Tolleson, and Avondale in an area with \$15 billion in residential and commercial property. Unfortunately, floodwater seepage in the dam has sounded the alarm for us to reduce the dam's risk of failure.

Similarly, thousands of residents and hundreds of critical facilities, including Luke Air Force Base and Interstate 10 depend on the Agua Fria River Trilby Wash, or McMicken Dam, a 9.5-mile long earthen embankment, constructed in 1955 by the Corps of Engineers, for flood protection. But because of dam safety deficiencies, land subsidence, earth fissuring, urbanization and non-compliance with current dam safety standards, the dam's ability to maintain its current level of protection is questionable at best.

We must begin new feasibility studies for both Cave Buttes Dam and Agua Fria River Trilby Wash so the Corps of Engineers can investigate flood risk management needs as well as

potential improvements to improve the safety of the two dams so we can strengthen flood risk protection for the region.

The second critical flood control project is Tres Rios, an ongoing ecosystem restoration project along the Salt and Gila River corridors in Phoenix, that is a part of Rio Reimagined, an Urban Waters Partnership Project. Completing Tres Rios would improve the low flow channel for flow conveyance and support native riparian habitat, remove aggressive invasive species like the salt cedar, which consumes large amounts of water, and improve native biodiversity and wildlife habitat. I appreciate the subcommittee providing funding this fiscal year for the post authorization change report, and I look forward to working with you to secure the federal funds necessary to complete this project.

The third project is Rio Salado Oeste, another ecosystem restoration project that is part of Rio Reimagined. Rio Salado Oeste would connect Tres Rios and Rio Salado to create a contiguous 19-mile restored river corridor. The project would improve the river's channel to better manage flood risk and restore habitat. Unfortunately, the project has been on hold since 2009. I would ask the subcommittee to provide funding for the Corps to conduct a general re-evaluation report so this project can be restarted.

And finally, the Continuing Authorities Program (CAP), which is authorized by the Flood Control Act of 1948, provides the Corps of Engineers the authority to solve water-resource, flood-risk mitigation and environmental restoration challenges in partnership with local sponsors without the need to obtain specific Congressional authorization. By cutting the amount of time required to budget, develop, and approve a potential project for construction, this program helps the Corps more efficiently plan and build projects that are smaller, less complex, and less costly. Arizona has several of these projects, and I am particularly interested in Section 205 for

small flood risk management projects and Section 206 for aquatic ecosystem restoration projects. Right now, though, the CAP program is overextended and underfunded. For example, Section 205 received only \$10 million this fiscal year but is authorized for up to \$69.3 million and Section 206 was funded at \$11 million and is authorized for \$63 million. I'm hopeful that the subcommittee can increase the size of these CAP programs to help these smaller projects.

Chairwoman Kaptur and Ranking Member Simpson, thank you for the opportunity to testify today and for your support for critical investment in our nation's water infrastructure.

Ms. KAPTUR. Thank you, Congressman Stanton, for taking the time to testify today and bringing to us the latest from the great State of Arizona. Can you provide for the record now just a brief explanation? In the time you have lived in Arizona, how has the average consumer of water, let us say, how has their life changed as a result of what is happening with the environment and the climate? What are your—is the cost to your water bills going up? Do you have to have more water rationing? What actually happens? Explain to members who don't come from districts like yours what actually happens in a place like Arizona?

Mr. STANTON. Well, as you know, Chairwoman, Arizona is one of the fastest growing states in the United States of America, and the great dichotomy is that as we urbanize, the per capita water use is actually significantly decreasing. The real challenge for water in Arizona is that the Colorado River, because of the drought conditions, is a diminishing resource. So, we have some big, big decisions to make.

We do have a plan, the Drought Contingency Plan, that has been approved by Congress. We passed that in a bipartisan way. That does have more significant restrictions as the tier level of shortage increases. We are about to hit Tier 2, which is very significant implications for users, not just residential users, but also our agricultural uses and our business uses as well. So, we have some big decisions to make in Arizona. Everyone is going to have to come together and engage in shared sacrifice. Everyone has to realize that they have a significant part to play in solving the long-term issues as it relates to the Colorado River. The Federal Government has a role to play, state government has a role to play, county and the long recovering mayor, as you know, the former mayor of Phoenix, local government has a significant role to play as well in overcoming the challenges of the megadrought.

Ms. KAPTUR. Thank you very much. I know California is facing related challenges and I know that they are difficult. So, good luck to you. And I wanted to ask Congressman Simpson if he has any questions or statements he would like to make before we conclude the hearing.

Mr. SIMPSON. Just want to thank you for your testimony. And, you know, the Colorado River Basin is fascinating project and stuff. And there is a book out that I read not too long ago that you might find interesting, about the history of the creation of the Colorado River project and the upper and lower basin, et cetera, et cetera. It is called, "Science Be Dammed." It doesn't solve the problem we are having today, but it is a really good history of somewhat how we got where we are. And, of course, the main reason that we got where we are today is because of the lack of water and the drought and so forth.

The main difference between the East Coast and the West Coast or Eastern United States and Western United States is that you guys try to get of water because you oftentimes have too much. That is why you never carry water rights. In the West we try to save every drop. That is why we have prior appropriation water rights, which is a totally different concept.

So, you know, the West and the East are different in those respects, but I appreciate the testimony and it is certainly going to be a tough time and a tough year for those of us in the West.

Ms. KAPTUR. I continue to be amazed at Congressman Simpson's knowledge and he reads books. So, I think that is what Members of Congress are supposed to be doing in this television era. It takes a different twist sometimes.

But I want to thank Congressman Stanton so very much. And with your testimony, Congressman Stanton, we will conclude today's hearing.

And I would like to thank all our colleagues for joining us today and those who could not join us who are submitting separate testimony for the record. Members who would like to submit written testimony have until the close of business today to provide this information to the subcommittee office. This hearing is adjourned. Thank you, Ranking Member, for your faithful service.

Mr. SIMPSON. Thank you.

Additional Written Testimony
For the Record

Congressman Jack Bergman, Michigan's First Congressional District

Chair Kaptur, Ranking Member Simpson, and Members of the Energy and Water Development Subcommittee, thank you for the opportunity to testify today. I am here speaking to you in support of construction of the new lock at the Soo Locks complex located in Sault Ste Marie, Michigan, in my district. I also want to take a moment and thank the Committee for its work up to this point in support of this project.

For those of you who may not be familiar with this project, the Soo Locks system serves a critical transportation need, not just for the Great Lakes region, but for our country. The Soo Locks connect Lake Superior with the other Great Lakes and, ultimately, with the rest of our country – making it a critical waterway and necessary access point for our nation's manufacturing and commercial industries. Currently, the Poe Lock, the largest of the Locks, is a single point of failure in a system that supports millions of jobs throughout the supply chain and generates over one trillion dollars in economic activity. Congress identified the clear need for modernization of the Soo Locks when it initially authorized the construction of a new lock in 1986, 2007, and again in 2018, when this project was last reauthorized.

A 2015 Department of Homeland Security report articulated the threat to the U.S. and global economy of an unscheduled outage of the Poe Lock, highlighting the need for redundancy and modernization at the Soo Locks. Any disruption of the Poe Lock would likely shut down steel production in the Great Lakes, and consequently bring North American appliances, automobile, construction equipment, farm equipment, mining equipment, and railcar production to a halt. This would have devastating economic implications for not only the Great Lakes region, but also to the greater North American economy.

Ensuring this new lock gets built has truly been a bipartisan endeavor, and the work already underway is a testament to that fact. Funding to date has been utilized for design, contract procurement, and construction of the upstream channel deepening, design and contract procurement for the upstream approach walls, and continued design of the new lock chamber, with on-site construction having begun in 2020. However, the Army Corps is not immune to many of the issues facing the rest of the country right now: costs for everything from labor to equipment have gone up. And adding to that, unfortunately, are miscalculations in the metrics used within the original cost estimate, which are now being worked out by the Army Corps. Ultimately, this combination of factors has led to an increase cost estimate for this critical project.

That is why I am here today asking the committee to make increased investments in the U.S. Army Corps of Engineers' Construction Account, where projects like the new lock construction at the Soo Locks can compete for funding. This project has received widespread, bipartisan support in the House, Senate, and across multiple administrations, which is how we've gotten this far. And I urge the subcommittee to maintain this momentum by adequately funding the construction account, so that the Army Corps has the resources it needs for the new lock when creating its FY23 workplan. I will also note that last month I sent a letter, cosigned by 25 of my House colleagues, to this subcommittee urging continued support of the project and additional funding for the Army Corps Construction account, which I believe demonstrates the continued support across Congressional districts.

The Soo Locks are an integral component of the Great Lakes Navigation System. As unique, critical infrastructure, building the new lock at the Soo is not only significant for my district, or for the state of Michigan, but it's truly an area of national importance. Again, I thank

the subcommittee for its interest in this project and for allowing me to testify. I look forward to working with you all to keep the momentum going.

Thank you,

Jack Bergman
Member of Congress

Written Testimony of Representative Sean Casten (IL-06)
Subcommittee on Energy and Water Development, and Related Agencies
May 24, 2022

Chairwoman Kaptur and Ranking Member Simpson, thank you for the opportunity to submit written testimony to the House Energy and Water Development, and Related Agencies subcommittee. My testimony will touch upon the importance of electrifying the nation through targeted investments in transmission, the need for continued investment for industrial decarbonization and battery storage programs authorized in the Energy Act of 2020, as well as continued support for the Department of Energy's (DOE) Loan Programs Office (LPO).

Industrial Decarbonization:

Congress made important strides in the fight against the climate crisis by passing the Energy Act of 2020, which authorized several research, development, demonstration, and commercial application (RDD&CA) projects across promising energy research areas. Sections 6001-6006 established RDD&CA programs in industrial decarbonization, modeled after my Clean Industrial Technologies Act legislation.

The industrial decarbonization crosscutting initiative funded in FY22 started much of this important effort, however there is still work to be done. For Fiscal Year 2023, I urge the subcommittee to fund the crosscut at \$800 million, and to specifically ensure that demonstration activities are prioritized. Additionally, I ask that the expertise of the of DOE Advanced Manufacturing Office (AMO) and Energy Efficiency Renewable Energy (EERE) be leveraged in carrying out these programs.

Industrial emissions were the third largest category of US emissions in 2018, representing 22% of all US Greenhouse gas emissions. By continuing to unleash DOE's research prowess on the question of industrial emissions we can meet our climate goals of a net-zero world. I thank the subcommittee for their previous support of industrial decarbonization efforts and ask that these further funds be allocated to continue the forward trajectory.

Energy Storage:

I also urge the subcommittee to bolster funding for the energy storage crosscutting initiative. Energy storage technologies are unique in that they add value to the entire electricity grid – they help balance electricity supply and demand while simultaneously alleviating congestion on transmission infrastructure. These technologies act as an important stabilizing factor on the grid and will become increasingly important as the US power grid continues to grow its clean power generation capacity.

Just as with industrial decarbonization, Section 3201 of the Energy Act of 2020 created a new research and development program within DOE to advance energy storage technologies. The provision of the Energy act, based on my Better Energy Storage Technology Act, also authorized a pilot grant program, allowing DOE to enter into agreements to fund energy storage system demonstration projects. Thanks to the subcommittee’s work in FY 22, much of these activities were funded through the energy storage crosscut. Continued and robust funding in FY23 will move us towards a low-carbon, reliable electricity grid for the 21st century.

Transmission Buildout:

Modelling by Princeton University’s Net Zero America Project has mapped out a wide variety of scenarios and pathways to net zero emissions, and in all these pathways, the total electric transmission capacity in the United States is projected to increase by two- to five-fold over the next thirty years. This is an enormous undertaking, requiring an unprecedented build-out of high-voltage and high-capacity long-distance transmission lines on a mindboggling timescale—an effort which would be simply impossible under the current regulatory framework and given current economic incentives.

In line with the President’s Budget Request, and alongside the Sustainable Energy and Environment Coalition Power Sector Task Force, I ask the subcommittee to fund the establishment of the Grid Deployment Office to support this undertaking. A centralized office for transmission buildout at DOE would create a home for the various grid provisions of the Infrastructure Investment and Jobs Act (IIJA), including the Transmission Permitting and Technical Assistance (TTPA) activities previously funded under the Office of Electricity. Transmission is how we can connect low-cost and low-carbon electricity sources to consumers

and deliver results for the American people, and the Grid Deployment Office will assist in accelerating these efforts.

Simultaneously, it is vitally important that the Transmission Facilitation Program receive continued funding beyond the \$2.5 billion in IIJA to develop long-haul transmission lines to improve grid resilience and reliability and to facilitate interregional transfers of electricity. The program provides DOE tools including loans and authority to purchase power off-take capacity in new project, capacity it would resell to replenish the fund. While these monies are just getting out the door, it is important to signal to industry this will be a long-term priority to appropriately stimulate investment and will be an important tool in achieving a net zero economy,

Transmission Technologies:

In addition to buildouts of new wires, I am also very interested in leveraging technologies to modernize our grid and increase efficiencies. Increased federal investment in transmission infrastructure would adapt the grid to withstand the effects of climate change, lower electricity costs for consumers, and provide greater access to clean and reliable electricity.

To that end, I urge the subcommittee to provide \$100 million in funding for a high voltage direct current (HVDC) moonshot initiative to support R&D to bring down long-distance transmission costs, including for nascent superconducting technology. Further, I urge the subcommittee to commit at least \$600 million to the Transmission Reliability and Resilience, Resilient Distribution Systems, and Applied Grid Transformation Solutions programs to increase grid flexibility nationwide and improve resilience to extreme weather disasters, and cyber-attacks.

Lastly, I ask the subcommittee include language asking DOE to conduct a study on the benefits of establishing an energy conservation standard for overhead electricity conductors. Advanced conductors are high-voltage, modernized power lines that can help reduce line losses by 25-40%, which increases energy efficiency and reduces harmful carbon pollution. By replacing legacy conductors with advanced conductors on existing system structures at constrained points on the grid, we would quickly and cost-effectively add greater reliability, resiliency, and flexibility to the grid.

Loan Programs Office:

Lastly, I urge the subcommittee to ensure the Loan Programs Office (LPO) at DOE is prioritized, as the office plays a crucial role in shepherding high-risk advanced energy technologies that have been proven to work at commercial scale over the final valley of death, allowing them to attract private capital and follow-on funds. In its nearly two-decade history, LPO has supported more than 30 projects that have drawn over \$30 billion investment, created 37,000 jobs, and avoided 60 million tons of greenhouse gas emissions.

Passage of the Energy Act of 2020 and IIJA have helped LPO refine its application process, clarify, and expand technology, and provide flexibility for financing terms and fees. Qualified applications can now more easily access programs, hence why LPO is seeing a surge of interest.

In order to help LPO meet its full potential in deploying innovative energy technologies and supporting vehicle manufacturing, I urge the subcommittee to provide robust support for the Advanced Technology Vehicles Manufacturing Program (ATVM), to take action to unlock increased loan guarantee authority for Title 7 to meet the scale of demand for innovative projects, and to lift the IIJA prohibition on utilizing existing authority and appropriations for IIJA-expanded authorities. This would apply to both ATVM and Title 17 critical minerals/state energy financing.

I am very appreciative of the subcommittee's prior support for our nation's innovation ecosystem and encourage the subcommittee to continue to provides LPO with the resources it needs to unleash the next generation of American breakthroughs.

Statement of Congressman Steve Cohen (TN-09)
Subcommittee on Energy and Water Development and Related Agencies
5/16/22

Thank you, Chairwoman Kaptur and Ranking Member Simpson, for holding this hearing and providing the opportunity to testify on Fiscal Year 2023 priorities for the Energy, Water Development and Related Agencies Appropriations bill. I appreciate your consideration of the following programs which will upgrade our nation's energy and water infrastructure and combat climate change.

First, I'd like to request robust funding for the Weatherization Assistance Program (WAP), which helps low-income families, seniors, veterans, and individuals with disabilities improve the energy efficiency of their homes, freeing up limited resources for other essentials like food and medicine. In my district, half of the low-income households spend more than 13.2% of their annual income on utilities, which is significantly higher than the national average of 3.5%. In addition to reducing the energy burden on low-income residents in Shelby County, weatherizing more homes will also improve the housing stock with energy efficient technologies, make residents' homes more comfortable, improve public health by increasing indoor air quality, and reduce pollution generated from excess energy consumption.

I'd also like to request full funding, or \$79 million, for the U.S. Army Corps of Engineers' National Levee Safety Initiative (NLSI), which sets levee safety guidelines, maintains the National Levee Database, provides for levee rehabilitation and repair, and supports state levee safety programs. In my district, there are seven levee systems that make up 29 miles with an average age of 72 years. This includes the Nonconnah Levee System and the Wolf River Backwater Levee System, which have both been successful at preventing flooding in the past for

populations of 576 and 12,161 and property values of \$454 million and \$410 million respectively.

Additionally, I'd like to request funding for three complementary approaches to tackling the critical energy innovation challenges before us: \$700.15 million for Advanced Research Projects Agency-Energy (ARPA-E); \$130 million for Energy Frontier Research Centers (EFRCs); and \$50 million for the Office of Technology Transitions (OTT). These programs serve as important building blocks to achieving our energy goals. I'd like to request \$300 million for WaterSMART, which helps to implement the SECURE Water Act, a law that authorizes water and science agencies to work together with state and local water managers to plan for climate change and other threats to water supplies. I'd also appreciate the inclusion of robust funding for the Department of Energy's Office of Science, which is the nation's primary sponsor of research in the physical sciences and has contributed greatly to our quality of life, health and security. The Office of Science has been integral to the development of several innovative technologies such as MRI machines and PET scans, DNA sequencing technologies, more aerodynamic and fuel-efficient long-haul trucks, electric vehicle battery technology, and 3-D models of pathogens for vaccine development.

Thank you, Chairwoman Kaptur and Ranking Simpson, for the opportunity to discuss these critical matters for my district and the nation and for your leadership on the Subcommittee.

Rep. Eric A. “Rick” Crawford
AR-01

Thank you, Chairwoman Kaptur and Ranking Member Simpson, for allowing me to submit testimony for the FY 2023 appropriations process and highlight several key concerns of my constituents. The water resources in the United States are critical to our economy and sustain every industry in some way.

First, I request that the committee provide support for the operation and maintenance activities for inland and coastal navigation throughout the nation. The inland waterways system consists of approximately 12,000 miles of commercially navigable channels and 239 lock chambers to support the movement of goods to and from 38 states. The inland waterway system carries approximately 557.8 million tons of cargo, valued at nearly \$300 billion, each year. Unfortunately, much of the physical infrastructure of the system is aging and is in dire need of improvements. Congress should invest in this infrastructure today in order to avoid costly breakdowns in the future. This should include proper investment in the Inland Waterways Trust Fund—which is essential to the 445-mile navigation channel in Arkansas, the McClellan-Kerr Arkansas River Navigation System (MKARNS).

Additionally, the MKARNS has suffered from a lack of adequate operation and maintenance funding. As a 50 year-old system, the maintenance needs of the MKARNS continue to grow more and more severe, but neglect has led to a maintenance backlog of approximately \$300 million. Losing navigation on the entire MKARNS would cost over 6,000 jobs and cause national GDP to decline by \$723 million. I respectfully request that the committee provide funds for the continued work on MKARNS.

Another priority to my district is the Mississippi River and Tributaries Project (MR&T). Proper funding of the MR&T is necessary to help avoid widely devastating floods and to ensure this waterway remains open and able to carry the massive stream of trade vital to American commerce. The MR&T has been critical to protecting the lower Mississippi Valley from floods and maintaining navigation along the Mississippi River and its tributaries, and it is critical to the Mississippi River Valley and the nation that we continue to proactively invest in this infrastructure.

Finally, the Biden administration’s FY 2023 proposed budget would cut the U.S. Army Corps of Engineer’s recreation program from the enacted FY22 level of \$295 million to \$240 million. Outdoor recreation is an underrecognized economic driver in the United States, and since the COVID-19 pandemic, American outdoor recreational activity has boomed, with a 30 percent increase specifically in spending on boating and fishing. Arkansas is home to several significant USACE lake and river projects that are widely used for recreation. Without proper investment

and maintenance, this increasingly important part of the Arkansas economy will suffer. Therefore, I request the committee commit adequate funding to the USACE recreation program to ensure these sites remain available to Americans.

Thank you for considering these requests.

Rep. Veronica Escobar, TX-16

Thank you, Chairwoman Kaptur and Ranking Member Simpson, for hosting this Member Day hearing.

I have the honor of representing El Paso, Texas in Congress and am truly grateful to have the opportunity to be advocating for the needs of our community. This subcommittee has played a critical role in supporting water and energy infrastructure requests in my community and I would like to take this opportunity expand upon project I have submitted to the subcommittee for consideration.

The first project is the Franklin Canal Concrete Lining Project, which would be used to install shotcrete liner on a 1-mile section of the Franklin Canal in central El Paso. This canal is critical to the Rio Grande and would conserve approximately 293 acre-feet of water per year. It is also an opportunity to expand upon construction of the Paso Del Norte Trail which will connect Downtown El Paso with the Medical Center of the America campus. The canal lining will allow us to get us closer to completion of the trail which is a vital piece of the region's eco-tourism plans and a way of creating outdoor spaces for El Paso to enjoy.

The second project is the SAC 1 Sediment Detention Basin. Last year El Paso saw a record amount of rainfall which led to stormwater damage and flooding to many different parts of the district. We know that the climate crisis will only get worse so we need to do what we can now to address any future damage to property. The SAC 1 Sediment Detention Basin would be a 34 acre foot desilting basin strategically placed to detain peak flows and sediment from an nearby channel. It would detain peak flows and sediment that routinely affect street crossings, residential, commercial and agricultural land. This project will also prevent erosion and collapse

of downstream structures some of which have already been reconstructed due to failure caused by the accumulation of sediment and will protect the existing structures from future damage.

The third and final project is the El Paso International Airport Solar Covered Parking Project. El Paso is one of the sunniest places in the country and is looking to lead the way towards using solar energy to power our region. This project would be used to design and construct a solar covered parking facility located directly in front of the terminal in short term parking. The 2.5 acre system is expected to generate 1.5MW of solar which will offset 2.1MW consumed by the Terminal annually. This would help supplement the airports energy needs and will be a key building block as the airport tries to move towards a net-zero operating stance.

Thank you to the subcommittee for this opportunity and consideration of my requests.

Congressman Brian Mast (FL-18)

Chair Kaptur, Ranking Member Simpson and members of the Subcommittee on Energy and Water Development: thank you for taking the time to hear from me on behalf of my constituents in Florida's 18th Congressional District. By far and away what I hear from the members of my community most about are the water quality issues that plague us.

Specifically, our beloved Treasure Coast is used as a dumping ground for toxic, polluted water from Lake Okeechobee. Millions and millions of gallons of fresh water that is filled with harmful algal blooms (HABs) or the nutrients that cause them are sent east from the lake down the St. Lucie River, decimating our brackish estuary. The St. Lucie does not need any freshwater from the lake, and in fact, was not naturally connected to Lake Okeechobee. Yet, 3 out of every 4 years we receive these discharges.

The water from Lake Okeechobee has caused HABs in the St. Lucie that are so thick they look like guacamole. They smell as disgusting as they look, and they often test many, many times higher for the cyanotoxin microcystin than what the EPA has deemed safe for humans. Microcystin is tied to horrible health effects in humans—things like headaches and nausea and rashes upon immediate contact, gastrointestinal problems, liver failure, tumors, ALS, and even Alzheimer's farther down the road. Exposure to this water has killed family pets.

Releases from Lake Okeechobee spell disaster for the Treasure Coast:

It takes a toll on the economy also. Countless businesses along the water, fishing captains and tourism-based companies have to shut down as a result.

It hurts home values, as well. Who wants to eat dinner, paddleboard, or live along water that will make you sick?

It's obviously horrible for public health, and it inflicts severe damage on the delicate estuarine ecosystem by killing subaquatic vegetation that is vital for the estuary's animals to eat to stay alive.

One of the solutions to this problem is Everglades restoration, which will allow more water to be sent south to the River of Grass where it is needed and keep the water out of the Treasure Coast's waterways, where it is harmful. This committee has faithfully worked to fund the United States Army Corps of Engineers' (USACE) construction account for South Florida Ecosystem Restoration (SFER), with last year's funding being the highest yet. This year, I am requesting that Congress build upon that progress by including \$725 million in the SFER account.

The Army Corps has worked alongside the State of Florida in this 50/50 partnership and has made great progress in the Comprehensive Everglades Restoration Plan (CERP). But there is still a lot of work left to do, and Congress and the Administration have let opportunities slip away to shore up desperately needed funding for CERP. For example, the lack of funding for the EAA Reservoir in the *Infrastructure Investment and Jobs Act (IIJA)* was a missed opportunity to complete this most important of all projects. The EAA Reservoir will hold 240,000 acre-feet of cleaned water, meaning that the Everglades will have more water to keep it healthy in the dry

season. In turn, my community and the communities to the west of the lake can avoid disaster far more often.

By providing \$725 million for the SFER account, Everglades restoration can continue to move forward so that we can put the days of businesses shutting down, ecosystem devastation and public health crises closer to being in the rearview mirror. I'm committed to ensuring the federal government pays their fair share in this monumental effort, and I appreciate the partnership this committee has shown to doing just that. Thank you for your time and consideration of my request.

U.S. Congressman Pete Sessions (TX-17)

Dear Chairwoman Kaptur and Ranking Member Simpson,

As you begin crafting the fiscal year 2023 bill, I respectfully request that you give consideration to the following funding priorities:

1. Please provide a funding level of \$1,000,000 for the **Lake Waco Embankment Study** as a community project funding request in fiscal year 2023. The entity intended to receive funding is the City of Waco, 600 Austin Ave. Waco, TX 76710. This project would be a valuable use of taxpayer funds because the results of this Lake Waco Embankment Study would help to forestall any extensive property damage for both the city and U.S. Army Corps of Engineers as well as preventing a detour or loss of a major regional thoroughfare as well as water quality concerns and decreased access to Lake Waco. I certify that neither I nor my immediate family has any financial interest in this project.

This \$1,000,000 would be for the Corps to assess the cause of damages and degree of instabilities to the embankment of Lake Waco that has led to road deterioration and deformation threatening failure of the entire embankment. As documented in preliminary engineering reports prepared for the City of Waco, this could lead to a catastrophic failure that could result in significant injury or loss of life as well as serious property damage and regional transportation disruptions as well as severe environmental damage to Lake Waco.

Lake Waco is a major recreational area for the city, county and region. It is the sole-source water supply for the city of Waco. This project would set in motion a collaborative process that would help prevent damage to property owned by both the City of Waco and the US Army Corps of Engineers. It would also avoid the necessity of the City of Waco having to establish a detour for Lake Shore Drive which would disrupt a major regional thoroughfare. Finally, this requested funding would also prevent serious water quality concerns for Lake Waco resulting from the failure of the embankment.

The City of Waco will provide the required local match of 25% and is prepared to do so without delay.

2. Please provide funding at the President's fiscal year 2023 budget request level for the Lake Whitney Reallocation Study. This project would be a valuable use of taxpayer funds because the results of this reallocation feasibility study would be used to achieve the Brazos River Authority's ultimate goal of making more water supply available to meet future demands for water in the Brazos River Basin.

3. Please support the President's FY23 budget request of \$739,000,000 for Department of Energy/Office of Science/Nuclear Physics programs in your fiscal year 2023 bill. The fundamental research supported by the Office of Science's Nuclear Physics program at the Department of Energy is critical for

understanding the building blocks of energy that can be used down the line for a variety of national security and commercial applications. However, the research is so early-stage that it is not supported by industry or late-stage end users. Providing for this early-stage research is therefore a good use of federal taxpayer dollars. The Department of Energy's Nuclear Physics program funds essential research at Texas A&M and other Texas universities. The Texas A&M Cyclotron Institute at Texas A&M University is a Department of Energy University Facility and is jointly supported by Department of Energy and the State of Texas. It is a major technical and educational resource for the state and the nation.

4. Please include the following report language in your fiscal year 2023 bill for the Fuel Cycle Research & Development program in the Nuclear Energy Account at the Idaho National Laboratory: "Advanced Nuclear Fuel Availability. Within available funds, the recommendation provides not less than \$3,500,000 for testing and qualification of a next-generation thorium/HALEU-based fuel suitable for existing and new reactors."

Thank you for your consideration of these requests.

DINA TITUS
MEMBER OF CONGRESS
1ST DISTRICT NEVADA



CONGRESS OF THE UNITED STATES

HOUSE OF REPRESENTATIVES
WASHINGTON, D.C.

May 25, 2022

COMMITTEE ON
FOREIGN AFFAIRS
COMMITTEE ON
HOMELAND SECURITY
COMMITTEE ON
TRANSPORTATION &
INFRASTRUCTURE

CHAIRWOMAN, SUBCOMMITTEE ON
ECONOMIC DEVELOPMENT, PUBLIC BUILDINGS,
AND EMERGENCY MANAGEMENT

The Honorable Marcy Kaptur
Chairwoman
House Committee on Appropriations
Subcommittee on Energy and Water
Development, and Related Agencies
2362-B Rayburn House Office Building
Washington, D.C. 20515

The Honorable Michael Simpson
Ranking Member
House Committee on Appropriations
Subcommittee on Energy and Water
Development, and Related Agencies
1036 Rayburn House Office Building
Washington, D.C. 20515

Dear Chairwoman Kaptur and Ranking Member Simpson,

As you continue your work on the Energy and Water Development, and Related Agencies for Fiscal Year (FY) 2023, I respectfully request that you give full and fair consideration to my language request to effectively terminate the proposed Yucca Mountain nuclear waste repository in Nevada.

The relationship between the Department of Energy and State of Nevada has long been a difficult and painful one. For over three decades, the Department of Energy has left open the possibility of Nevada's becoming the dumping ground for the nation's nuclear waste, a proposal we have fought since the Nuclear Waste Policy Act was signed into law in 1987. Our State does not produce nuclear waste and we should not be forced to store it.

In 2012, the Blue Ribbon Commission on America's Nuclear Future advocated for a consent-based siting of nuclear repositories, a sentiment echoed by the recent *Reset of America's Nuclear Waste Management Strategy and Policies* report led by a panel of experts including former Nuclear Regulatory Commission (NRC) members. I am pleased that, unlike the previous Administration, President Biden and Secretary Granholm are supportive of this consent-based approach that would only send nuclear waste to communities where state, local, and Tribal governments agree to its storage.

Not only is terminating the proposed repository good policy, but it would also save taxpayers significant money. In 2008, the Department of Energy estimated that without major interruptions, and if the nearly four hundred contentions raised by the State of Nevada are somehow adjudicated and dismissed, it would still take \$1.66 billion to complete the multi-year process for receiving construction authorization. If that were to happen, the State of Nevada estimates that construction to complete Yucca Mountain would cost \$96 billion dollars. That figure does not take into account the costs of transporting highly radioactive nuclear waste through 44 States and the District of Columbia, including 330 Congressional Districts. With an estimated 100,000 trucks needed to transport the waste, that would amount to an average of 4-6

trucks per day, every day, for 50 years. Congress has already wasted \$15 billion dollars on this doomed project and we should not waste a penny more.

I know you have a difficult task ahead of you as you make these critical decisions. If you require further information, please do not hesitate to contact Mitch Moonier in my office at (202) 225-5965. Thank you for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "Dina Titus". The signature is fluid and cursive, with the first name "Dina" and last name "Titus" clearly distinguishable.

Dina Titus
Member of Congress

U.S. Rep. Randy K. Weber (TX-14)

TESTIMONY FOR THE RECORD
House Committee on Appropriations
Subcommittee on Energy and Water Development

Chair Kaptur and Ranking Member Simpson:

Thank you for the opportunity to provide testimony for the record, regarding the fiscal year 2023

Energy and Water Development, and Related Agencies (E&W) appropriations bill. I

respectfully request that you consider the following priorities.

1. Provide a funding level of \$283,000,000 for the Sabine-Neches Waterway Dredging Project.
2. Provide a funding level of \$165,000,000 for the Freeport Harbor Channel Improvement Project.
3. Provide a funding level of \$2,000,000 for the Gulf Intracoastal Waterway (GIWW), Colorado River Locks and Brazos River Floodgates Project.
4. Provide a funding level of \$2,000,000 for Lamar University's Southeast Texas Data Analytics and Cybersecurity (SETX-DAC) for Energy Supply Chain Resilience Project.
5. Provide a funding level of \$8,000,000 for the USACE Operations & Maintenance (Dredging of Sabine River) Project.
6. Provide a funding level of \$39,000,000 for the Hickory Cove Marsh Section 1122 Beneficial Use (Dredging of Sabine River) Pilot Project.
7. Include the following bill language for the Operations and Maintenance account of the Donor and Energy Transfer Ports program.

"Provided: WRDA 2020 Section 104, ADDITIONAL MEASURES AT DONOR PORTS AND ENERGY TRANSFER PORTS adjusted the Donor and Energy

Transfer Port (D&ET) program qualification criteria from a one-time evaluation when the program was established in WRRDA 2014 to an average annual basis for the previous 3 fiscal years to meet the 40 million ton threshold. Covid-19 severely impacted port operations in 2020 (and currently in 2021) such that 2 of the existing Energy Transfer ports would not qualify due to Fiscal Year 2020 and 2021 reductions in port operations."

The modification of the qualification criteria to take into consideration COVID impacted ports loss in tonnage would address the significant amount of funding loss to affected ports. A rolling three-year average to meet a 40-million-tons threshold is the new 2020 WRDA eligibility criteria for the Energy Transfer Ports. D&ET funded activities include maintenance dredging that benefits commercial navigation to harbors.

8. Include the following bill language.

"Provided: For the project for Hurricane and Storm Damage Risk Reduction authorized by Section 1401(3)(3) of P.L. 115-270 (132 STAT. 3838), the Secretary shall include the costs for all lands, easements, and rights of way, not owned by the non-Federal sponsor prior to execution of the PPA, that are required for the project in total project costs, and credit the value of the lands, easements, and rights of way against the non-Federal share of project costs in accordance with provisions of Section 103(c)(5) of P.L. 99-662, as amended (33 U.S.C. § 2213)."

The Project Partnership Agreements for each separable element (Port Arthur, Orange County, and Freeport) of the Sabine Pass to Galveston Bay, Texas CSRM Project (S2G) includes specific language limiting credit only to lands acquired from private landowners. This eliminates the ability to receive credit for acquisition of lands, which are identified by USACE as required for the project, from entities like the Port of Port Arthur, City of Port Arthur, Port Arthur School System, Lamar University, the City of Orange, Orange County, the Port of Orange, Texas Parks and Wildlife, and others. The GCPD requests that all lands, easements, and rights-of-way (LER) acquired be credited toward the non-Federal sponsor 35 percent cost share.

9. Provide a funding level of \$6,000,000 for the Integrated University Program within the Department of Energy (DOE) Office of Nuclear Energy.

This program supports outstanding, cutting-edge university research by: 1) ensuring university research and development is relevant to the DOE Nuclear Energy programs and integrated with research occurring at national laboratories and the nuclear industry; 2) attracting students throughout the state of Texas, to nuclear professions and creating a pipeline of researchers, technicians, and others who are available to supplement the aging workforce; and 3) building the infrastructure and capabilities at U.S. universities to enhance their ability to perform research and educate students.

10. Provide a funding level of \$211,000,000 for the Advanced Small Modular Reactor Program within the DOE's Office of Nuclear Energy.

At this funding level, NuScale would be able to complete the standard plant design, submit its standard design approval application (SDAA) to the Nuclear Regulatory Commission (NRC) and support the NRC review of the SDAA. Utah Associated Municipal Power Systems (UAMPS) would be able to continue NRC Combined License Application preparation, progress the plant design, and complete a higher-confidence project cost and schedule estimate. The funding request of \$211 million is an increase over FY 22 funding levels, reflecting the progress of the UAMPS' project (known as the Carbon Free Power Project, CFPP) from the design to the construction phase. FY23 funds will support three key UAMPS work streams and related milestones: 1) Long Lead Material orders (including queue reservations, if required) that can take substantial lead times to deliver and can be adversely affected by supply chain impacts; 2) Finalizing the Combined Operating License Application and related site-specific engineering, permitting, and Environmental Report development; and 3) Refining the project cost estimate

(PCE) from Class III to Class II level of detail, significantly improving the confidence interval of the estimate through more extensive vendor pricing and the use of more detailed engineering, maintenance, and operating cost inputs.

11. Support the President's FY23 Budget funding level of \$739,000,000 for the Office of Science's Nuclear Physics program at DOE.

The fundamental research supported by the Office of Science's Nuclear Physics program at the DOE is critical for understanding the building blocks of energy that can be used down the line for a variety of national security and commercial applications. However, the research is so early-stage that it is not supported by industry or late-stage end users. Providing for this early-stage research is therefore a good use of federal taxpayer dollars. The Nuclear Physics program funds essential research, like the Texas A&M Cyclotron Institute.

College Station is a DOE University Facility and is jointly supported by DOE and the State of Texas. It is a major technical and educational resource for the state and the nation. The Cyclotron Institute conducts basic research and educates students in accelerator-based science and technology and provides technical capabilities for a wide variety of applications in space science, materials science, analytical procedures, and nuclear medicine.

12. Provide a funding level of \$5,675,000 for the Aquatic Nuisance Species Research Program within the U.S. Army Engineer Research and Development Center.

The request supports pressing needs of the U.S. Army Engineer Research and Development Center to develop next generation ecological models that will provide accurate predictive ecology in order to reduce risks associated with decision-making for these complex ecosystem and navigation systems. This research will enable informed decisions that will maximize our

resources and ensure they are available for future generations. This is critically important to our communities in Texas and throughout the nation.

13. Provide a funding level of \$2,100,000 for the Inland Waterway Navigation Charts program within the U.S. Army Corps of Engineers' Operations and Maintenance account.

An additional \$2.1 million is urgently needed in fiscal year 2023 to competitively procure commercially developed innovative technology for the Army Corps to upgrade its aging/obsolete inventory of GPS and optical-based surveying, mapping, and scanning equipment with modern systems for both topographic and hydrographic missions.

14. Include the following bill language.

The Committee recognizes the Department's continued investment in research and development on unconventional fossil energy technologies, including support for field laboratories. The Committee provides \$7,000,000 to the Department to fund the rapid development of a prototype or prototypes of the new technology identified by the Department which uses solid propellant fuel to generate gas, which drives hydraulic systems to shut off unwanted flows or blow outs of oil or gas from onshore or offshore wells in the shortest possible time with the highest possible reliability and efficiency. The Department will ensure that this new technology is created, patented, built and deployed by an American company or companies, and the Department will also protect the confidentiality of the intellectual property and patents for this new technology."

Chair Kaptur and Ranking Member Simpson, on behalf of my constituents in the 14th Congressional District of Texas, I thank you for your consideration of these requests.

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Public Witness Testimony

**WRITTEN STATEMENT ON FY 2023 REQUEST
FOR THE COLORADO RIVER BASIN SALINITY CONTROL PROGRAM
U.S. BUREAU OF RECLAMATION ACTIVITIES

SUBMITTED TO THE UNITED STATES HOUSE
COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT AND RELATED
AGENCIES**

**BY ADEL HAGEKHALIL, GENERAL MANAGER,
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA**

MAY 4, 2022

Dear Chairwoman Kaptur, Ranking Member Simpson, and members of the Subcommittee,

Thank you for the opportunity to provide written testimony in support of fiscal year 2023 (FY23) funding for the Colorado River Basin Salinity Control Program (Program) in the amounts listed in the table below. Congress authorized the Program in the Colorado River Basin Salinity Control Act (P.L. 93-320) to enhance and protect the quality of water available for Colorado River water users in the United States and the Republic of Mexico. This FY23 funding request will help fulfill obligations of this Act and prevent further water quality degradation and related economic damages in our region.

Subcommittee	FY22 Appropriation Request	FY23 Appropriation Request	Federal Agency	Salinity Control Program
Interior, Environment, and Related Agencies	\$2.0 Million	\$2.0 Million	Bureau of Land Management (BLM)	Aquatic Habitat Management Sub-Activity
Energy and Water Development, and Related Agencies	\$10.7 Million	\$10.7 Million	U.S. Bureau of Reclamation (Reclamation)	Title II – Basinwide Program
Agriculture, Rural Development, Food and Drug Administration, and Related Agencies	\$12.4 Million	\$15.6 Million	Natural Resources Conservation Service (NRCS)	Environmental Quality Incentives Program (EQIP)
Total	\$25.1 Million	\$28.3 Million		

As a regional water wholesaler, The Metropolitan Water District of Southern California (Metropolitan) provides supplemental water for 26 public member agencies to deliver—either directly or through their sub-agencies—to nearly 19 million people living in Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura counties. Metropolitan imports about one fifth of Southern California’s water supply from the Colorado River.

The Program has successfully reduced the salinity of the Colorado River by over 90 milligrams per liter (mg/l) at Lake Havasu. Despite the Program’s success, salt in the Colorado River continues to cause an estimated \$354 million in damages to water users each year, including damages to consumer and commercial equipment, water supply treatment processes, agriculture, groundwater replenishment activities, and wastewater recycling. Many of these damages occur within Metropolitan’s service area as water imported via the Colorado River Aqueduct has the

highest salinity of all of Metropolitan's supplies, averaging around 630 mg/L since 1976. The continuing severe drought in the western United States threatens to exacerbate these damages as low river flows and record-low reservoir volumes provide less water to dilute saline inflows.

Without the Program, damages to Colorado River water users would be much higher. Modeling by Reclamation indicates that economic damages would rise to approximately \$671 million—almost double current damages—by the year 2040 without continuation of the Program. Metropolitan urges the Subcommittee to support funding for the Program in FY23 at the levels outlined above so that it can avoid these additional impacts of increased salinity.

Given the scale of these potential damages, Congress's continuing modest investment in the Program yields a substantial rate of return. In addition to Congress's contribution, the seven Colorado River Basin States provide matching funds up to 30% of Program funding, extending the value of Congress's contribution even further.

The Program funds the Paradox Valley Unit (PVU), which includes a deep injection well used to sequester brine from the hyper-saline Dolores River (a tributary to the Colorado River) in western Colorado. The well has been virtually non-operational since March 2019 due to induced seismic activity in the valley. The PVU is especially important to our region as it is the largest single salinity control project in the Program. Historically, the PVU has reduced salt loads to the Colorado River by over 100,000 tons per year and salt concentrations at key downstream locations by up to 9 mg/L. Given the unique importance of the PVU, Metropolitan urges Reclamation to resume operation of the existing well and to expedite the process of finding a

long-term solution that prevents the salt from reaching the Colorado River. Metropolitan also requests the Subcommittee's support for resuming PVU operations as soon as practicable.

The Colorado River Basin Salinity Control Forum (Forum) was formed in 1973 to coordinate the Colorado River Basin states' salinity control efforts. The U.S. Environmental Protection Agency (EPA) has charged the Forum with reviewing the Colorado River's water quality standards for salinity every three years (the "Triennial Review"). In so doing, the Forum adopts a Plan of Implementation consistent with these standards. The level of appropriations requested in this testimony is in keeping with the Forum's Plan of Implementation adopted in the 2020 Triennial Review, which will be implemented by the BLM, Reclamation, and the NRCS.

Metropolitan appreciates your consideration of this request. Please feel free to contact me if you have any questions.

Sincerely,

Adel Hagekhalil
General Manager



American Council for an Energy-Efficient Economy

529 14th Street, N.W., Suite 600 • Washington, D.C. 20045 • 202.507.4000 • 202.429.2248 • www.aceee.org

**Testimony to the House Energy and Water Development Subcommittee
On the Department of Energy’s FY 2023 Budget for the Advanced Manufacturing Office
and other Industrial Decarbonization Priorities**

Alexander Ratner, Federal Policy Manager

American Council for an Energy-Efficient Economy (ACEEE)

Chairwoman Kaptur, Ranking Member Simpson, and members of the subcommittee, the American Council for an Energy-Efficient Economy (ACEEE) appreciates the opportunity to provide written testimony on the appropriations and activities of the federal agencies under the Subcommittee’s jurisdiction. ACEEE, a nonprofit research organization, develops transformative policies to reduce energy waste and combat climate change. With our independent analysis, we aim to build a vibrant and equitable economy – one that uses energy more productively, reduces costs, protects the environment, and promotes the health, safety, and well-being of everyone. While we strongly support funding for a wide variety of energy efficiency programs as detailed in a joint letter, this testimony focuses on more details on funds needed for the Department of Energy’s Advanced Manufacturing Office (AMO) and other priority areas to further much needed industrial decarbonization efforts. For the Fiscal Year 2023 budget ACEEE recommends that funding for the Department of Energy’s Advanced Manufacturing Office (AMO) be increased to \$600 million from \$416 million in FY22 to accommodate the more ambitious agenda of decarbonizing US manufacturing by midcentury, supported by the enactment last Congress of the Energy Act of 2020 and the Clean Industrial Technology Act. This goal also requires funding for industrial decarbonization activities in offices beyond AMO in light of the

ongoing departmental reorganization. Thus we also seek \$200 million for transformative technology adoption at the Office of Clean Energy Demonstrations (OECD) and funding for two programs within Manufacturing and Energy Supply Chains (MESC): \$30 million for Industrial Assessment Centers and \$40 million for the establishment of a Flex-Tech program.

Advanced Manufacturing Office (AMO): \$600 million to enable the research, development, demonstration and deployment of industrial energy efficiency and advanced manufacturing technologies. This level of funding is intended to accommodate an ambitious agenda of decarbonizing US manufacturing by the midcentury. This goal of dramatic reductions requires increases in activity levels across the office and some important changes in the orientation of the office's goals. AMO should expand its efforts from promoting energy efficiency to include reducing carbon emissions for manufacturing and reducing the embodied carbon in manufactured products more broadly. We expect DOE to release its long-delayed industrial decarbonization roadmap very soon, and as AMO rebuilds its staffing, the office should focus on adding expertise in important decarbonization technology areas identified in its research road mapping.

While we support providing AMO increased flexibility in funding in order to reorient the office to the challenge of industrial decarbonization most effectively, we think the following programs and objectives should be part of the office's direction and have included our estimate of FY23 funding needed:

- Technical Assistance and Workforce Development:
 - *Strategic Energy Management:* AMO should promote Strategic Energy Management practices and establish a program to provide competitive grants to companies for the hiring or designation of plant energy managers. Strategic Energy Management is especially important for small and medium-sized manufacturing plants. (\$15 million)
 - *Save Carbon Now:* AMO should expand the Better Plants program to offer comprehensive assessments and engagements to the 1,500 largest energy using and greenhouse gas emitting manufacturing facilities in order to address natural gas shortages and assist decarbonization. These engagements should include, but not be limited to, targeted assessments of energy-saving and emissions reduction opportunities, staff training, technical assistance and analyses, and education. The enhanced Save Energy Now program run by the Department of Energy from 2008 to 2011 achieved CO₂ emissions reductions of about 1.8 million metric tons per year and natural gas savings of about 98 TBtu per year.ⁱ (\$55 million)
 - *Smart Manufacturing:* AMO should support the development and adoption of smart manufacturing practices (the use of automated controls to achieve large process efficiencies) directed towards small and medium-sized manufacturers. This includes, but is not limited to, extending and expanded funding for the Clean Energy Smart Manufacturing Innovative Institute (CESMII) to increase educational and technical assistance activities directed toward smart manufacturing adoption. (\$30 million)

- Industrial Process Heat Decarbonization R&D: AMO should support industrial process heating decarbonization through the establishment of a research, development, and deployment effort by AMO to promote the adoption of technologies that can dramatically reduce the GHG emissions from process heating applications, the largest source of industrial emissions.¹¹ (\$55 million)

Office of Clean Energy Demonstrations (OCED): \$200 million for transformative technology adoption through the establishment of a grant program that provides cost-share payments to manufacturing facilities that make the first at-scale implementations of transformative technologies to reduce GHG emissions in intensive manufacturing processes. The high cost of implementing new technologies at an industrial scale is a key barrier to the process transformations needed for competitive, decarbonized, domestic manufacturing.

Manufacturing and Energy Supply Chains (MESC):

- Industrial Assessment Centers: \$30 million for the Industrial Assessment Centers (IAC) program to expand the program in order to increase the number of university-based centers to 40; to establish satellite centers at community colleges, technical schools, and union training facilities; and to establish an apprenticeship program with matching funding for IAC students at facilities that have received assessments in the recent past to facilitate the implementation of recommendations.
- Flex Tech: \$40 million for the establishment of a Flex-Tech program that provides grants to states and tribal governments partnered with educational institutions and trade

associations to provide energy and greenhouse gas reduction assessments and loans to implement identified measures at small and medium-sized manufacturers.

Thank you for the opportunity to share these recommendations, and please let us know if we can provide additional information.

¹ Wright, A., M. Martin, and S. Nimbalkar. 2010. Results from the U.S. DOE 2008 *Save Energy Now* Assessment Initiative: [sic.] DOE's Partnership with U.S. Industry to Reduce Energy Consumption, Energy Costs, and Carbon Dioxide Emissions. Oak Ridge, TN: Oak Ridge National Laboratory. info.ornl.gov/sites/publications/files/Pub25190.pdfaceee.org/research-report/ie2201

² Rightor, E., P. Scheihing, A. Hoffmeister, and R. Papar. 2022. Industrial Heat Pumps: Electrifying Industry's Process Heat Supply. Washington, DC: American Council for an Energy-Efficient Economy. aceee.org/research-report/ie2201.

**Testimony Prepared by the American Society for Microbiology
Submitted for the record to the United States House of Representatives
Committee on Appropriations
Subcommittee on Energy and Water Development, and Related Agencies
May 26, 2022**

Submitted on behalf of: Allen Segal, Director of Public Policy and Advocacy
American Society for Microbiology, 1752 N Street, NW, Washington, DC 20036
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The American Society for Microbiology (ASM) appreciates the opportunity to submit outside witness testimony for the Fiscal Year 2023 Energy and Water Development, and Related Agencies appropriations bill in support of increased funding for the Department of Energy Office of Science. The American Society for Microbiology (ASM) is one of the largest professional societies dedicated to the life sciences and is composed of 30,000 scientists and health practitioners. ASM's mission is to promote and advance the microbial sciences.

The Department of Energy (DOE) Office of Science is a leader in advancing critical industries of the future, including quantum information science, artificial intelligence, high performance computing, advanced communications networks, future energy technologies, and engineering biology. As we rise to meet the challenges of the 21st Century, microbial science funded by the DOE Office of Science remains vitally important. **ASM urges Congress to fund the DOE Office of Science at \$8.8 billion in fiscal year (FY) 2022, an increase of 18 percent above FY 2021 and consistent with the bipartisan House and Senate DOE Science for the Future Act.**

Funding from the DOE Office of Science through the National Laboratories, universities, and other programs has generated some of our most economically important innovations and is the primary driver of basic research, including critical areas of genome-scale, quantitative analysis

of microbial research. This support has enabled researchers to use microbes to solve energy and environmental problems, and to bring those solutions to scale by developing empirical, computational, and mechanistic modeling tools.

Office of Science funding led to the creation of the Bioenergy Research Centers, which support research into viable and sustainable domestic biofuel and bioproducts industries. Each of the four Centers is led by a DOE national laboratory or university, and each takes an innovative approach to improving and scaling up advanced biofuel and bioproduct production processes. Recent investments in the Joint Genome Institute and the National Microbiome Data Collaborative will lead to more effective analysis of microbiome data and better coordination of multidisciplinary microbiome research across the federal government. DOE National Laboratories were effectively deployed in the fight against COVID-19, using their supercomputing and modeling capabilities to both understand components of the virus and to find drug compounds to treat it. Thousands of projects funded by NIH (National Institutes of Health) and NSF (National Science Foundation) utilize DOE facilities each year, and more than fifty Fortune 500 companies and many small businesses use these facilities to conduct the underlying research required to develop innovative technologies and products that drive the economy, including the growing bioeconomy.

Microbial Research is Needed to Face 21st Century Challenges

Our society faces several large, complex, and interconnected challenges, many of which can be addressed through microbial research. Inexpensive renewable sources of energy, fuels, and chemicals are essential for continued economic growth, but the environmental tradeoffs of

increased energy production must also be considered. Microbial science funded by DOE Office of Science can lead the way in developing sustainable strategies to feed an ever-growing population by increasing plant and agricultural productivity and quality; by providing strategies to ensure that future U.S. citizens enjoy clean air, water, and a high standard of living; in transforming human health by providing everything from new pharmaceuticals, reagents for precision medicine, and next generation antibiotics; and by producing cost-competitive fuels, chemicals, and materials from abundant renewable resources. These and other advances in decarbonization, the production of biomaterials or bio-based polymers, and others based on new microbial catalysts will only happen with strong, stable investments in the Office of Science.

The Office of Science currently funds four Bioenergy Research Centers (BRC), which support research into viable and sustainable domestic biofuel and bioproducts industries. These four Centers are developing viable and sustainable domestic biofuels and bioproducts derived from non-food plant biomass, such as poplar, switchgrass, and sorghum. This research will lead to lower greenhouse gas emissions, bring jobs to rural areas, and boost our energy security, and **we strongly encourage Congress to continue fully funding the Bioenergy Research Centers.**

DOE-Funded Microbiome Research Spurs Innovation

In its stewardship of innovation at DOE's National Laboratories, universities, and other programs, the Office of Science is a critical partner in advancing areas of national need, supporting research in key emerging areas including artificial intelligence and microbiome research. The Biological and Environmental Research (BER) Directorate at DOE explores the frontiers of genome-enabled biology, deepens our understanding of physical and biogeochemical

Earth processes, and enables innovation and discovery through their user-facilities. Funding is crucial not only for the continuation of research for existing programs within the BER, but also for new initiatives such as the national virtual climate lab and the Biopreparedness Research Virtual Environment (BRaVE).

Microbiome science aims to advance understanding of microbial communities (microbiomes) for applications in areas such as health care, food production, and environmental restoration to benefit individuals, communities, and the environment. Scientific understanding of the microbiome has evolved significantly since the concept of the human microbiome emerged two decades ago. We now know that microbial communities exist everywhere, making the microbiome relevant to all living things. Yet, there remains much to discover regarding how microbiomes function as communities, interact with their hosts and environment, and their overall potential to improve health and ecosystems. The rapid pace of discovery has led to greater technology needs and data sharing infrastructure.

The Interagency Strategic Plan for Microbiome Research, FY2018-2022, developed by the Microbiome Interagency Working Group (MIWG), provides recommendations for improving coordination of microbiome research among Federal agencies and between agencies and non-Federal domestic and international microbiome research efforts. The five-year Strategic Plan coordinates microbiome research activities across 21 government agencies, describing the interagency objectives, structure and operating principles, and research focus areas. As noted in the Interagency Strategic Plan for Microbiome Research, microbiome data is “Big Data,” which requires consistent and reliable database and resource coordination to facilitate data collection,

analysis, interoperability, and data sharing. The NMDC (National Microbiome Data Collaborative) is aimed at empowering this type of microbiome research. Spearheaded by Lawrence Berkeley National Laboratory, in partnership with Los Alamos, Oak Ridge, and Pacific Northwest national laboratories, the NMDC is leveraging DOE's existing data-science resources and high-performance computing systems to develop a framework that facilitates more efficient use of microbiome data for applications in energy, environment, health, and agriculture.

Our nation's ability to make significant advances in solving energy and environmental problems depends on advances in the microbial sciences. This will only be possible if Congress continues its commitment to robust and sustained funding increases for the Department of Energy's Office of Science.

Testimony of April Snell, Executive Director, Oregon Water Resources Congress,

Submitted to the United States House Appropriations Committee,

Subcommittee on Energy and Water Development and Related Agencies,

May 27, 2022

RE: U.S. Department of the Interior's FY2023 Budget for the U.S Bureau of Reclamation

The Oregon Water Resources Congress (OWRC) continues to support increased funding for the U.S Bureau of Reclamation's (Reclamation) Water and Related Resources program and requests that a minimum of \$2 billion be included in the FY2023 Budget, an increase from the \$1.7 billion enacted for FY2022. Reclamation's highly effective WaterSMART Initiative has been woefully underfunded for years and needs significant resources to meet the broad and diverse water supply and infrastructure needs in the seventeen western states Reclamation serves. Additional funding will help leverage state and local resources, support collaborative partnerships, and enhance coordination between other federal agencies.

OWRC was established in 1912 as a trade association to support the protection of water rights and promote the wise stewardship of water resources statewide. OWRC members are local governmental entities, which include irrigation districts, water control districts, drainage districts, water improvement districts, and other agricultural water suppliers that deliver water to roughly one-third of all irrigated land in Oregon. These water stewards operate complex water management systems, including water supply reservoirs, canals, pipelines, pumps, and hydropower facilities. About one-half of our members are in Reclamation Projects and most of our members have been awarded grants under the WaterSMART program or have contracts with Reclamation.

WaterSMART Initiative

OWRC strongly supports increased funding for Reclamation's WaterSMART Grants and the Water Conservation Field Services Program (WCFSP)—the two programs used the most by Oregon's irrigation districts to support water conservation activities. These programs are an important part of the overall funding package for water resources projects collaboratively developed by local communities, supported with local and state funding, and designed to meet those communities' unique needs while still meeting the goal of water conservation.

The WCFSP is a key component in supporting irrigation districts and similar water delivery systems' water conservation efforts. The WCFSP has provided a breadth of technical assistance to irrigation districts and provided partial funding for materials used to pipe and line canals, water measurement and other technology, and water conservation plans—all supporting water conservation efforts being implemented by these districts. Providing increased funding for WCFSP projects will yield immediate and cost-effective water conservation measures in all seventeen western states served by Reclamation.

Additionally, we believe the management of the WCFSP should remain with the Regional Offices to retain the close connection between Reclamation and Project managers and ensure Reclamation's resources are used to best support the management of its Projects. The WCFSP is one of the Reclamation services most appreciated by our members. The regional staff, and particularly the local area office staff, understand the unique operating and delivery challenges of the various Projects, and therefore provide very meaningful support to the managers of those Projects.

WaterSMART Grants

WaterSMART cost-share grants have supported Oregon districts' efforts to improve water delivery systems, conserve water, and implement innovative projects to meet water needs

in Oregon. These projects have been a key ingredient in the districts' cooperative efforts with other stakeholders in their respective river basins to address in-stream, water quality, and water supply needs of their basins, without reducing the amount of land to which the districts deliver water and avoiding regulatory actions by federal or state agencies. There continues to be more applicants than available funding and additional financial resources are needed to enable local water suppliers to continue their work to conserve water and help meet the Secretary's water conservation goal. With a return of over \$5 for every \$1 of federal investment, and non-federal match generally exceeding the required amount, this program far surpasses the results of other partnerships between the federal government and local project sponsors. The following projects are examples of how the WaterSMART Initiative has been recently used in Oregon:

Water and Energy Efficiency Projects:

- **Klamath Irrigation District, Supervisory Control and Data Acquisition and Automation Improvements** -The District, located in southern Oregon, will install twenty-one new Supervisory Control and Data Acquisition components on gates and canals throughout the system that do not currently have automated controls. The project will provide near real-time data on flow rates, water elevations, and control device statuses, and is expected to result in annual water savings of 19,500 acre-feet by reducing spills, over-deliveries, and seepage. Conserved water can be stored in Upper Klamath Lake for a longer period, which may benefit fish species, including the endangered Short nosed Sucker and Coho Salmon, by increasing lake levels and reducing lake temperatures, while also providing a more reliable supply for growers during times of shortage. In addition, conserved water may be available for the fall waterfowl migration at the Lower Klamath National Wildlife Refuge. The project has significant support from stakeholders, including the Klamath Basin

National Wildlife Refuge Complex, the Farmers Conservation Alliance, and Ducks

Unlimited. **Reclamation Funding: \$500,000, Total Project Cost: \$1,071,774**

- **North Unit Irrigation District, Optimized Conveyance Efficiency and Control in Main Canal** - The District, located in central Oregon, will upgrade the automation at nine gated check structures and seven measuring stations along the main canal of its distribution system. The improvements will increase conveyance efficiency and operational control, resulting in an expected annual water savings of 3,337 acre-feet. Overallocation of the Deschutes River and an agreement to adapt dam operations to reduce impact on endangered species has limited District water usage to 60-75% of a water user's minimum water right. The district has shut down periodically because of drought and shortage. Water conserved because of the project will be stored within Haystack Reservoir for a more controlled and targeted release during the irrigation season to avoid further reductions during times of drought. **Reclamation Funding: \$244,871, Total Project Cost: \$511,611**

Small-Scale Water Efficiency Projects

- **North Unit Irrigation District, Lateral 41-9 and 58-3-2 Piping Project** – The District, in central Oregon, will convert two open canals with 4,450 linear feet of buried high-density polyethylene pipe. This project will reduce water lost to seepage, improve conveyance efficiency, and reduce problematic sediment transport. This project is prioritized through several planning efforts, including the District's System Improvement Plan. **Reclamation Funding: \$74,691, Total Project Cost: \$149,383**
- **Talent Irrigation District, East Main Canal Chamberland Shotcrete Project** – The District, in southern Oregon, will line two unlined sections of the East Main Canal totaling 320 linear feet, with reinforced shotcrete liner. The upgrade will increase the efficiency and

reliability of water deliveries. The project supports the District's Water Management and Conservation Plan of 2018. **Reclamation Funding: \$16,220, Total Project Cost: \$32,441**

- **West Extension Irrigation District, Irrigation Main Water Meter Project, Boardman East** – The District, in northeast Oregon will install nine magnetic meters at the head of six piped laterals. The project will allow the District to see at a glance how much water is being delivered down each lateral. This project will help the District better manage their water supply, resulting in improved water supply consistency and resilience to drought. The metering of these laterals is identified in the 2016 update of the District's Boardman Master Plan. **Reclamation Funding: \$32,500, Total Project Cost: \$65,000**

Further innovative projects like the ones above could be developed and implemented in Oregon if more funding is made available through the WaterSMART Initiative. Additionally, OWRC would like to see the funding cap increased from \$1 million to \$5 million in areas where there are known endangered, threatened, or vulnerable species. By increasing the funding cap, Reclamation would have the ability to fund projects aimed at improving species habitat at a higher level, allowing for these important projects to move forward.

We respectfully request the appropriation of at least \$2 billion for Reclamation's Water and Related Resources program for FY2023. Providing increased funding for the WaterSMART Initiative is a wise investment that will leverage resources, increase strategic partnerships, and yield immediate and long-term benefits for our nation's economy, environment, and communities. Thank you for the opportunity to provide testimony regarding the FY2023 budget for the U.S Bureau of Reclamation.

Sincerely, April Snell, Executive Director

Address: 795 Winter Street, NE Salem, OR 97301

TESTIMONY

House Energy and Water Development Subcommittee on Appropriations
Honorable Marcy Kaptur, Chairwoman

Fort Peck Reservation Rural Water System (PL 106-382)
 Assiniboine and Sioux Rural Water System (ASRWSS)
 Dry Prairie Rural Water System (DPRWS)

Bureau of Reclamation

1. FY 2023 Budget Request

The Assiniboine and Sioux Rural Water Supply System and Dry Prairie Rural Water System respectfully request FY 2023 appropriations of \$6.808 million, part of the Bureau of Reclamation Rural Water Program (Table 1).

The FY 2023 federal funding request is \$1.799 million for the Assiniboine and Sioux Rural Water Supply System (ASRWSS) and \$5.009 million for the Dry Prairie Rural Water System (DPRWS) to fully complete project construction at a combined cost of \$6.808 million, including projected 5% inflation during FY 2022. The request completes all elements of the Fort Peck Reservation Rural Water System, Montana, (PL 106-382, October 27, 2000). Future requests will be limited to inflation on projects initiated in FY 2023 and FY 2024 that are not covered by the 5% projected inflation in FY 2022.

TABLE 1

FY 2023 FUNDING REQUEST
FORT PECK RESERVATION RURAL WATER SYSTEM (PL 106-382)

<u>Sponsor</u>	<u>Project Feature</u>	<u>Federal</u>
Assiniboine and Sioux Rural Water Supply System	Complete Project Improvements	1,798,886
	Subtotal	\$1,798,886
Dry Prairie Rural Water System	Outlook Branches	5,009,199
	Subtotal	\$5,009,199
Total		\$6,808,085

The project expresses the greatest appreciation to the Chair and Subcommittee for their unwavering support during the construction of this vital infrastructure in a vast area of Montana only slightly smaller than the state of Massachusetts.

2. Project Status and Funding Needs

The project was greatly assisted by FY 2022 appropriations of \$17.191 million and FY 2022 allocations of \$39 million by the Bureau of Reclamation from the Bipartisan Infrastructure Law (BIL) as shown in Table 2.

Considerable project inflation through FY 2021 in PVC pipe material prices, an increase of more than 100%, triggered a re-pricing of the project by the Reclamation Technical Service Center in Denver. The re-pricing was completed on March 31, 2022, and resulted in an increase in the authorized construction ceiling for ASRWSS from \$220.026 million to \$229.456 million or an increase of \$9.430 million. Similarly, the authorized construction ceiling for DPRWS was increased from \$132.367 million to \$172.617 million an increase of \$40.250 million of which \$30.950 million was federal and \$9.660 million was non-federal.

After applying funds as shown in Table 2 to all remaining projects in FY 2022, a cost of \$6.484 million remained to complete both projects within the Reclamation-adjusted authorized ceilings. That amount was increased by 5% for projected FY 2022 inflation to arrive at the request for FY 2023 of \$6.808 million. PVC pipe material prices in FY 2022 have soared an additional 19%.

TABLE 2

FUNDS NEEDED TO COMPLETE PROJECTS GIVEN FY 2022 ALLOCATIONS

Remaining Costs and Available Funding	ASRWSS	DPRWS	Total
FUNDING TO COMPLETE PROJECTS			
TSC Remaining Project Costs (-15% for Design contingencies+ TERO/GRT) and Post-October 201 remaining Costs in Master Plan	\$41,223,447	\$83,698,704	\$124,922,151
Available Funding			
FY 2021 Carryover	\$22,510,222	\$29,123,079	\$51,633,301
FY 2022 Appropriations	17,000,000	191,000	17,191,000
BIL			
Initial Allocation	0	7,000,000	7,000,000
Reserve (Requires Concurrence of Boards)	0	32,000,000	32,000,000
Subtotal	\$39,510,222	\$68,314,079	\$107,824,301
Needed to Complete Remaining Projects			
Total	\$1,713,225	\$15,384,625	\$17,097,850
Federal	1,713,225	4,770,665	6,483,890
Non-Federal	0	10,613,959	10,613,959
CEILING AND REPRICING ADJUSTMENTS			
October 2021 Indexed Authorized Ceiling			
Total	\$220,026,000	\$132,367,105	\$352,393,105
Federal	220,026,000	100,599,000	320,625,000
Non-Federal	0	31,768,105	31,768,105
Re-priced Authorized Ceiling (From October 2021 Master Plan Adjusted for TSC Pricing)			
Total	\$229,455,857	\$172,617,259	\$402,073,116
Federal	229,455,857	131,189,117	360,644,974
Non-Federal	0	41,428,142	41,428,142

The recognition, cooperation, collaboration, and focus of the Bureau of Reclamation at the national, regional, area, and project level were extraordinary during the inflationary crisis, and both projects are grateful.

Note that the decisions by Reclamation on the allocation of FY 2022 appropriations, BIL funding, and remaining work to be completed within both projects have been discussed extensively with Reclamation but are not formalized at the time of this writing. Table 2 is based on the expectations of both projects based on discussions, but not formal allocations, which are still coming.

With FY 2023 appropriations as requested and future adjustments for inflation, both projects can be successfully completed as originally envisioned. Both projects will serve their water users with safe, adequate, and reliable water supplies for the foreseeable future without shortage in supply or deficiency in quality.



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PUBLIC WITNESS TESTIMONY
FY 2023 APPROPRIATION

TO: The Honorable Marcy Kaptur, Chairwoman
The Honorable Michael K. Simpson, Ranking Member
House Appropriations Subcommittee on Energy and Water
Development, and Related Agencies

SUBJECT: Continued Funding for the Colorado River Basin Salinity
Control Program under Reclamation's Basinwide Program

FROM: Bill Hasencamp, Chair
Colorado River Basin Salinity Control Forum

DATE: May 25, 2022

Waters from the Colorado River are used by approximately 40 million people for municipal and industrial purposes and used to irrigate approximately 5.5 million acres in the United States. Natural and man-induced salt loading to the Colorado River creates environmental and economic damages. In 2020 the Bureau of Reclamation (Reclamation) estimated the *quantifiable* damages to Lower Basin water users due to elevated salinity levels at about \$354 million per year. Congress authorized the Colorado River Basin Salinity Control Program (Program) through the Colorado River Basin Salinity Control Act (Act)(P.L. 93-320) in 1974 to offset increased damages caused by continued development and use of the waters of the Colorado River. Modeling by Reclamation indicates that the *quantifiable* damages will rise to approximately \$671 million annually by the year 2040 without continuation of the Program.

Congress has directed the Secretary of the Interior to implement a comprehensive program for minimizing salt contributions to the Colorado River. Reclamation serves as the lead federal agency in implementing the Program. **Reclamation** primarily institutes salinity control through its **Basinwide Program**. A funding level of **\$10.7 million** is required in 2023 to prevent further degradation of the quality of the Colorado River and a commensurate increase in downstream economic damages to water users.

EPA has identified that more than 60 percent of the salt load of the Colorado River comes from natural sources. The majority of land within the Colorado River Basin is federally owned, much of which is administered by the Bureau of Land Management (BLM). In authorizing the Program, Congress recognized that most of the salts in the Colorado River originate from federally owned lands. Title I of the Act deals with programs downstream of Imperial Dam that enable the U.S. to meet its commitment regarding the quality of waters being delivered to Mexico (Minute No. 242 of the International Boundary and Water Commission, United States and Mexico). Title II of the Act addresses measures upstream from Imperial Dam, thus improving the quality of the water delivered to users in the United States. This testimony deals specifically with Title II efforts.

In the early years of the Program, Reclamation implemented salinity control through large projects, which were funded with specific line-item amounts. In 1995, Congress amended the Act and created Reclamation's Basinwide Program. Under this program, Reclamation funds competitive proposals for projects which will decrease the salt load to the Colorado River. Most of the received proposals target off-farm irrigation distribution systems such as canals and laterals. The lining or piping of canals and laterals prevents leakage of water into the groundwater system and the dissolution and transportation of salts to the Colorado River and its tributaries. It is more efficient and cost effective for Reclamation to perform the off-farm distribution system

improvements prior to NRCS treating the on-farm acres with salinity control practices (i.e., Reclamation should pipe a canal or lateral prior to the Natural Resources Conservation Service (NRCS) putting a pressurized sprinkler system on farm). Shortfalls in recent Basinwide Program funding levels have led to inefficiencies in the implementation of the overall Program. The funding amount identified above is required to get the Basinwide Program back on pace with the overall Program implementation needs.

Concentration of salt in the Colorado River causes approximately \$354 million annually in quantified damages and significantly more in unquantified damages in the United States and results in poor water quality for United States users. Damages, by water usage sector, include the following:

- a reduction in the ability to reclaim and reuse water for beneficial uses, including drinking water and irrigation water supplies, due to high salinities in the water delivered to water treatment and reclamation facilities,
- a reduction in the yield of salt sensitive crops, increased water use to meet leaching requirements and additional actions necessary to comply with the Clean Water Act within the agricultural sector,
- increased use of imported water and cost of desalination and brine disposal for recycling water in the municipal sector,
- a reduction in the useful life of galvanized water pipe systems, water heaters, faucets, garbage disposals, clothes washers and dishwashers, and increased use of bottled water and water softeners in the household sector,
- an increase in the cost of cooling operations and the cost of water softening, and a decrease in equipment service life in the commercial sector,

- an increase in the use of water and the cost of water treatment, and a corresponding increase in sewer fees in the industrial sector,
- a decrease in the lifespan of treatment facilities and pipelines in the utility sector, and
- difficulty in meeting wastewater discharge requirements to comply with National Pollutant Discharge Elimination System permit terms and conditions, and an increase in desalination and brine disposal costs necessary to minimize accumulation of salts in groundwater basins.

The Colorado River Basin Salinity Control Forum (Forum) is composed of gubernatorial appointees from Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming. The Forum is charged with reviewing the Colorado River's water quality standards for salinity every three years to facilitate compliance with Section 303(c) of the Clean Water Act (P.L. 92-500). In so doing, it adopts a Plan of Implementation consistent with these standards. The level of appropriation requested in this testimony is in keeping with the adopted Plan of Implementation. If adequate funds are not appropriated, significant damages from higher salinity concentrations in the water will be more widespread in the United States and Mexico.

In summary, implementation of salinity control practices through Reclamation's Basinwide Program has proven to be a very cost-effective method of controlling the salinity of the Colorado River and is an essential component to the overall Program. Adequate funding levels for salinity control within this Program will prevent the water quality of the Colorado River from further degradation and significant increases in economic damages to municipal, industrial and irrigation users. A modest investment in source control pays huge dividends in improved water quality for nearly 40 million Americans.

**Statement of the American Indian Higher Education Consortium
Submitted to the U.S. House of Representatives – Committee on Appropriations
Subcommittee on Energy and Water Development, and Related Agencies**

May 27, 2022

Request Summary

On behalf of the nation's Tribal Colleges and Universities (TCUs) that collectively are the American Indian Higher Education Consortium (AIHEC), we thank you for this opportunity to share our recommendations regarding the Department of Energy (DOE), National Nuclear Security Administration's (NNSA) Minority Serving Institutions Partnership Program (MSIPP).

Department of Energy (DOE): National Nuclear Security Administration – Minority Serving Institutions' Partnership Program – Tribal Education Partnership Program (NNSA-MSIPP-TEPP):

TCUs urge the Subcommittee to continue funding for the newly established Tribal Education Partnership Program, a TCU-specific sub-program within the NNSA-MSIP, at \$12,000,000 for FY2023.

TCU Advanced Manufacturing Network Initiative

The TCU Advanced Manufacturing Network Initiative (TCU AMNI) was established with funding from NNSA-MSIPP to support a pilot cohort of five TCUs in collaboration with AIHEC. This federal-TCU initiative is creating a career pipeline for American Indian and Alaska Native (AI/AN) students, beginning with the development of technical skills required to operate advanced manufacturing systems, which are coming to dominate the global manufacturing sector. Students completing technical training at TCUs are also prepared and encouraged to pursue an engineering academic and career pathway. The TCU AMNI initiative is contributing to the growth of a well-trained Native workforce of technicians, engineers, designers, and entrepreneurs. Through this initiative, TCUs are in a stronger position to help Tribes and Tribal members develop advanced manufacturing enterprises, which, in turn, can generate significant economic activity and create high-skilled jobs for their young people. These efforts have great potential of breaking the cycle of poverty that has plagued tribal communities for generations.

Success of the TCU Advanced Manufacturing Network Initiative (2015-2022)

The TCU AMNI is creating very promising and exciting projects on five TCU campuses. Below are summaries from the five participating TCUs.

Navajo Technical University – Crownpoint, NM

The Center for Digital Technology at Navajo Technical University (NTU) in Crownpoint, NM has established an advanced manufacturing program with a state-of-the-art facility including metal 3D printers, computer numerical control (CNC) machines and high-tech inspection, and validation instrumentation. Students at NTU are developing knowledge and skills in design engineering, manufacturing processes, and performance analysis. The Navajo Nation is making a significant investment in this program and is actively recruiting major industry partners for manufacturing contracts that will result in employment for NTU graduates. This program provides a model for how TCUs and Tribes can join the global manufacturing supply chain ecosystem, generate significant economic activity, and train students to join the technology and engineering workforce.

Cankdeska Cikana Community College – Fort Totten, ND

Cankdeska Cikana Community College (CCCC), located in rural North Dakota, has developed an advanced manufacturing certificate program that builds on an existing engineering program partnership with North Dakota State University. CCCC has partnered with the University Centers for Atmospheric Research (UCAR) on the design of environmental monitoring systems specifically to support local Tribal resource management requirements. They are currently developing a 3D-printed building materials capability that they are planning to use to help address the extreme housing shortage across the Tribal nations in North Dakota.

Salish Kootenai College – Pablo, MT

Salish Kootenai College (SKC) has established an Advanced Manufacturing Prototyping Lab (AMPL) used for both lab courses and open hours for students interested in exploring additive manufacturing projects,

AIHEC/Tribal College and Universities FY 2023 Energy and Water Development Appropriations Statement

following the FabLab model. SKC faculty have been implementing an underwater drone design project focused on drones capable of carrying instrumentation used to monitor the hydrology, biology, and lake sedimentology of Flathead Lake, the largest freshwater lake west of the Mississippi River.

Turtle Mountain Community College – Belcourt, ND

Turtle Mountain Community College (TMCC), located 10 miles from the Canada-U.S. border, is expanding their partnership with North Dakota State University (NDSU). The partnership was developed through a collaborative engineering program in which students complete their first two years of engineering at TMCC and transfer to NDSU to complete their degree. The engineering program integrates the college's advanced manufacturing program, providing students the opportunity to carry out engineering design projects and research using the college's advanced manufacturing facility.

Advancing the TCU AMNI Initiative (2021-Current)

Although the DOE-MSIPP grant supporting the Advanced Manufacturing Network Initiative (AMNI) concludes at the end of FY 2022, the project is continuing with support from AIHEC and the National Science Foundation. The next phase of the initiative is focused on expanding and implementing a micromanufacturing model in which TCUs build scalable 3D printer farms to help meet product supply chain demands for industries ranging from health care to robotics. TCUs will soon be able to provide their students access to an online certificate program in advanced manufacturing to address increasing workforce development needs within the manufacturing industry and support the development of Tribal manufacturing enterprises. Current and future partnerships between private industry and TCUs are centered in identifying specific manufacturing opportunities appropriate for small 3D printing facilities. Additionally, collaborations with NNSA National laboratories, such as Sandia National Laboratories, will provide technical support for the development of new projects that are consistent with Department of Energy priorities. TCUs will engage productively with the emerging distributed national manufacturing ecosystem in ways that contribute to sustainable Tribal economies.

MSIPP TCU Report Language Needed for Funding

The TCU AMNI represents a model for a partnership between the DOE and the nation's 35 TCUs that can help address the need for a more diverse STEM workforce within the NNSA National Laboratory system while promoting economic growth in Tribal communities. Historically, the competitive MSIPP grant program lacked distinct support for TCUs and Tribal communities.

In the FY2020 DOE budget, \$5 million was explicitly provided for a separate TCU program; however, a program was not initially established. Instead, the funds were added to the competitively awarded MSIPP grant program broadly available to Historically Black College and Universities and other Minority-Serving Institutions. In conducting the FY2020 MSIPP grant competition, NNSA did not include provisions specifically for TCUs, nor was an outreach strategy implemented to solicit TCU grant applications to ensure that TCUs would receive the \$5 million in Congressionally directed funding. Due to the lack of outreach by NNSA, few TCUs submitted proposals. After extensive feedback from AIHEC, NNSA released a new TCU-specific sub-grant program under MSIPP, entitled Tribal Education Partnership Program. While NNSA eventually took steps to administer Congressionally directed TCU funding, we respectfully request that report language and funding be included to ensure continuity in the newly established Tribal Education Partnership Program.

Conclusion

Struggling economies are endemic in Indian Country. We ask that Congress join us in bringing Tribal nations into the evolving global manufacturing community, transforming Tribal economies while addressing national energy technology challenges. TCUs provide quality higher education opportunities to thousands of AI/ANs and other rural residents, as well as essential community programs and services to those who might otherwise not have access to such resources. The modest federal investment in TCUs have paid great dividends in terms of employment, education, and economic development. We greatly appreciate your ongoing support of the nation's Tribal Colleges and Universities and your careful consideration of our

AIHEC/Tribal College and Universities FY 2023 Energy and Water Development Appropriations Statement

FY2023 appropriations requests.



COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

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TESTIMONY OF
Casey Mitchell, Chairman
Columbia River Inter-Tribal Fish Commission
Regarding the U.S. Army Corps of Engineers Civil Works FY2023 Budget
Appropriations Subcommittee on Energy and Water Development
United States House of Representatives

May 27, 2022

Madam Chair and members of the subcommittee, the Columbia River Inter-Tribal Fish Commission (CRITFC) is pleased to share our views on the need for coordinated flood risk management in the Columbia River basin and the U.S. Army Corps of Engineers (Corps) FY 2023 budget and additional needs for the next eight years. We specifically identify the following FY 2023 requests:

- 1. Conduct a Columbia River flood risk management study to inform future management activities.**
- 2. Fund Columbia River fish passage, production, and sediment management needs at \$144 million.**

1. Columbia River Flood Risk Management

The U.S. will lose coordinated flood risk management and assured flood storage in Canada if the Columbia River Treaty is not modernized by September 2024. This potential loss of storage and coordinated flood risk management emphasizes issues in the U.S. regarding capacity and capability of flood prevention infrastructure (reservoirs, levees and other similar structures) and planning (e.g. reservoir storage diagrams, levee construction and maintenance, and flood plain management) in the Columbia River basin, both for system-wide flood risk management and local flood risk management in the upper Columbia Basin and areas of high economic value in the lower Basin.

The tribes are very concerned that the loss of assured storage and coordinated flood risk management will adversely affect our efforts to restore ecosystem function as it will require larger and more frequent drawdowns at Grand Coulee Dam (Lake Roosevelt) and other U.S. reservoirs in order to provide minimal flood risk prevention. The dramatic changes in reservoir elevation it will involve would adversely impact resident fish, cultural resources, navigation, recreation, riverbank stability, and public safety. And finally, it will limit the system's capability to provide necessary spring and summer flows for salmon.

For these reasons, our tribes support Congressional authorization and appropriations for a region-wide public process to assess potential changes to the current level of flood risk protection in the Columbia Basin. This process should be initiated as soon as possible. Congress should authorize

Putting fish back in the rivers and protecting the watersheds where fish live

a comprehensive approach to solicit input from the public and stakeholders which addresses all options to manage both medium- and high-flow events; provides a review of infrastructure capacities and capabilities; floodplain management; Columbia Basin reservoir operations and levees, including both strategic improvements to existing levees and the potential to deconstruct levees to reconnect the river and floodplains; and finally the evaluation of potential impacts to other river uses and infrastructure such as navigation, bridges, and other transportation features, hydropower, irrigation, recreation, fish and wildlife, and cultural resources.

2. U.S. Army Corps of Engineers Budget Needs: \$144 million

The U.S. Army Corps of Engineers (Corps) is responsible for a series of activities across the Columbia River basin which are critical for the survival and recovery of treaty trust fisheries resources of the four lower river treaty tribes. These actions fall into four broad categories including the Columbia River Fish Mitigation Program (CRFM), Operation and Maintenance (O&M), hatcheries, and lamprey activities. CRITFC and other regional stakeholders estimate that these actions are not only severely underfunded, but also have a large backlog of necessary work to be conducted. It will require \$144 million per year for eight years to address the Corps' needs for the Columbia/Snake river system, or a total of \$1.154 billion.

The cost analysis was compiled by CRITFC staff to help better understand the budgetary needs and shortcomings for both the CRFM and the O&M. The Corps identified many items at the regional System Configuration meetings (SCT) and the unfunded items from the O&M budget were presented at the Fish Passage Operations and Maintenance regional meetings.

CRFM and O&M funding have been static or decreasing and therefore are falling behind the vital needs of the Columbia Basin. Critical maintenance is being delayed on 70-year-old structures and the risk to Endangered Species Act-listed anadromous fish species is increasing. Below are nine specific activities where increased funding is imperative to reduce the risk of catastrophic failure and loss of Endangered Species Act-listed fish runs.

Fish Ladder Repairs and Improvements (Cooling Structures included): \$160.4 Million

Fish ladders are necessary for adult salmon passage. The ladder technology at most of the dams on the Lower Columbia and Snake rivers is 50- to 80-years-old and in need of extensive repair. Diffusers and auxiliary water supply systems are key to supplying water throughout the fish ladder. The water supplied to the ladders for operation are provided either from fish turbines or pumps. Many of these pumps and turbines are aging and have failed. For example, John Day and McNary dams are operating with less than the needed number of pumps.

Climate change will increase river temperatures and impact salmon survival throughout the Columbia Basin. To help combat this, cooling water structures are needed at several of the adult ladders to prevent the creation of thermal barriers within the ladders. The total cost of ladder repairs and improvements is \$160.4 million.

Spillway Repairs and Improvements: \$201.2 million

The spillways at the dams are critical passage routes for juvenile salmon as they migrate to the oceans. The spillways also provide an important means for moving water during high flow events to aid in flood control. Modifications to the spillways have been ongoing for 20 years to

improve the efficiency and safety of the route. However, at several of the projects, most notably at Bonneville Dam, erosion and serious safety concerns about the operation of the spillway were expressed as early as 2000. The total cost of spillway repairs and improvements is \$201.2 million.

Fish Screen and Juvenile Bypass System Maintenance: \$132.7 million

Juvenile Bypass Systems (JBS) are a safer alternative passage route than going through the turbines for juvenile salmon and lamprey. Many of the JBSs are aging and need to be rebuilt or upgraded to reflect current knowledge of fish passage. JBS systems include standard length screens at several of the projects and these screens will need to be replaced within the next 8-10 years. The total cost of repairs and improvements to the fish screens and JBSs is \$132.7M.

Survival Studies (System and settlement spill operations, turbine improvements, reach survivals and PIT tag recoveries and detection improvements): \$59.5 million

Juvenile fish passage has improved using spill and avoidance of turbines at the dams. This new passage route requires the addition of monitoring equipment in the spillways to know if expected passage survival benefits are being realized. Better monitoring and information will enable the Corps to improve survival in future years. The total cost of studies and improvements for monitoring is \$59.5 million.

Predator Management: \$31.2 million

The Corps has historically funded extensive avian predator management programs in the mainstem and estuary. These programs are critical to improving survival of juvenile migrants. Invasive fish species such as northern pike, bass, and walleye are beginning to consume increasing numbers of juveniles. The Corps needs to increase funding for predator management and coordinate their predator management programs through a central forum to ensure that funding is targeting the most significant predation impacts to treaty trust resources in a comprehensive manner. Funding needs include \$3.2M for monitoring predator management programs and \$8M for implementing predator management in the Columbia River. We strongly encourage strong coordination between the Corps predator management programs, the Bonneville Power Administration, and the mid-Columbia public utility districts' predation management efforts. The total cost of predator management and predator deterrence structures is \$31.2 million.

Sediment Management and Cold-Water Refuges: \$12.5 million

Sediment management has been an overlooked problem since the construction of the dams. While some dredging has occurred to assist with inland navigation, accumulated sediment at tributary deltas caused by low flows in the mainstem creates a negative impact on salmon survival. Tributaries to the Columbia River below John Day Dam provide critical sources of cold water for migrating adult and juvenile salmon from July to September. Increased sediment levels at the tributary mouths are shallow, slow moving, and provide ideal conditions for warm water piscivorous fish and avian predators to predate on migrating fish. The region must consider dredging tributary river mouths and reconfiguring habitat in these areas to support native vegetation and re-create safe resting areas for fish. This will improve connectivity between cold water refuge areas and the main river. The appropriation request includes \$500,000/year for hydrographic assessments and monitoring and \$12 million to restore river mouths and create and

maintain cold water refuges. The total cost of sediment management and cold water refugia efforts are identified at \$12.5 million.

Estuary Restoration: \$6.5 million

All migrating fish in the Columbia River must pass through the estuary twice in their life cycle. It was not until the early 2000s that the Corps recognized the importance of habitat restoration in the estuary and began funding work to restore important habitat to support food webs and water quality improvements. The Corps and BPA have funded a considerable amount of work to restore priority areas, but significant work remains. Due to the damming of the Columbia River, the active channel and sediment transport through the estuary plume no longer provide the necessary diversity to support robust food webs, water quality, and refuge from predators that are necessary for the transitioning salmon. The total cost for continued estuary studies and actions is \$6.5 million.

Hatchery Modernization, Upgrades and Maintenance: \$240-360 million

Hatchery programs were instituted in the Columbia River Basin to mitigate for losses to fisheries associated with hydrosystem development and associated habitat loss and degradation. Artificially propagated juvenile salmon are released from the programs as a substitute for the juveniles previously produced by natural production across the basin. Some hatchery programs have been instituted with a conservation role—to rebuild return numbers of wild populations and conserve their natural productivity and genetic diversity levels. The need for conservation efforts was made more apparent with the recent listing of many of the basin's salmon populations as threatened or endangered under the Endangered Species Act (ESA).

A majority of the Columbia and Snake river basin hatcheries are aging structures that need major rehabilitation and improvements to their water systems, raceways, and other structural components. It is becoming increasingly difficult to operate these projects to meet the fish mitigation requirements that were authorized with their construction. Promised mitigation is not being implemented even while all the other benefits of the modern development of the Columbia River are being realized.

The total cost for the Corps' hatchery improvements and rehabilitations is \$240 to \$360 million. The need is presented as a range because the processes for final selection of John Day Mitigation (\$25-175 million) production measures have yet to be concluded. This funding request also includes the Corps' Willamette River hatchery needs.

Lamprey: \$165.1 million

Pacific lamprey hold great significance to the lower Columbia River treaty tribes for subsistence, ceremonial, traditional, and medicinal purposes, as well as their ecological contributions. Pacific lamprey restoration goals are to immediately halt their decline and to restore the species throughout its range to self-sustaining numbers sufficient to support tribal harvest. Pacific lamprey, like salmon, are anadromous and populations in the Columbia River basin have declined drastically in the past half century due to a number of factors including passage obstacles, entrainment, habitat degradation, poor water quality, contaminants, dredging, predation, poor ocean conditions, and climate change. The federal, tribal and state partners who entered the Columbia Basin Fish Accords in 2008 focused on aggressive action to restore Pacific

lamprey to avoid ESA listing. Blocked and delayed passage from dams severely limits lamprey migration to historic spawning habitat and has led to the extirpation of this species in the upper portions of the Columbia Basin. Dams alter the system for lamprey in all life stages and throughout their range. Ladders constructed for salmon are not suitable for lamprey due to differences in swimming style and ability. As such, lamprey needs must be considered when constructing new passage or improving upon older structures at the dams.

Passage improvements for lamprey have been made at the mainstem dams, however a significant amount of additional work is required. We estimate only 50 percent of lamprey successfully pass each consecutive dam during their upstream migration. Downstream passage is also problematic as lamprey are impinged on screens at the dams, inadvertently diverted and barged downstream with salmon, preyed upon, and endure poor water quality and other threats.

The tribes and the Corps have developed an implementation plan to enact actions to improve passage for Pacific lamprey. The cost of many of these improvements are significant and require multiple years of stable funding to be successful. Passage studies are required to monitor passage improvements and adjust or overhaul systems if the results of the studies suggest additional improvements are needed. The total cost for lamprey improvements and studies is \$165.1 million.

In summary, CRITFC and our four member tribes have developed the capacity and infrastructure to become the regional leaders in restoring and rebuilding Columbia Basin salmon populations. Our collective efforts protect our treaty-reserved fishing rights and provide healthy, harvestable salmon populations for all citizens to enjoy. We will be pleased to provide any additional information that this subcommittee may require.

Contact: Paul Ward, Director of Government Affairs, warp@critfc.org, 503.238.0667

Outside Witness Testimony
House Committee on Appropriations
Subcommittee on Energy and Water Development
Re: Army Corps of Engineers, Civil Works

Submitted by: Chad Berginnis, Executive Director
Association of State Floodplain Managers
May 9, 2022

The Association of State Floodplain Managers (ASFPM) appreciates the opportunity to provide this Outside Witness Testimony for the Committee’s record for the FY 2023 Energy and Water Development Appropriations legislation. ASFPM has a membership of 20,000 members, including members in 37 state chapters. Our members are largely state and local officials, but also include many engineers, planners, and other professionals supporting local communities’ efforts to reduce flood risk and wisely manage floodplains and flood-prone areas within their jurisdictions. Our membership additionally includes members of research and academic institutions, and the insurance and lending industries. Recommendations in ASFPM’s OWT testimony pertain to the following Corps of Engineers programs: **Section 22 Planning Assistance to States (PAS)** \$15 million; **Flood Plain Management Services (FPMS)** \$25 million; **National Flood Risk Management Program (NFRMP)**, including **Silver Jackets** (\$10 million), and support for planning and technical assistance for **nonstructural, natural feature, and nature-based feature alternatives** within all Corps flood risk management program planning, as emphasized in WRDA 2020.; and support for two studies directed in WRDA 2007 **Water**

Resources Priorities Study (Sec. 2032) and WRDA 2014 **Review of Emergency Response**

Authorities (Sec. 3029).

Increase Funding for Corps of Engineers Technical Assistance.

ASFPM has long supported the technical assistance programs of the Army Corps of Engineers Civil Works Program. In these programs, the Corps of Engineers can provide expertise and assistance to communities in developing solutions to flood challenges that can help make major strides toward reducing flood losses – often at considerably less costs, and without multi-million-dollar taxpayer investments in large Corps projects. The Corps technical assistance programs include **Section 22 Planning Assistance to States (PAS) (WRDA 1974, P.L. 93-251, as amended), Flood Plain Management Services (FPMS) (Section 206, 1960 Flood Control Act (PL 86-645), as amended), National Flood Risk Management Program (NFRMP) and the Silver Jackets program.** Appropriations for these programs are made through the Investigations – Remaining Items section of the Energy and Water Development Appropriations.

While these programs represent a relatively small portion of the total Army Corps budget, they provide a high return on investment. Many smaller jurisdictions, including lower-income and economically-disadvantaged and rural communities that generally would never qualify for a major Corps project or be able to afford the long-term Operations and Maintenance costs for major projects, especially through provision of key technical assistance, can develop smaller projects which can utilize non-structural, natural, or nature-based features, or a combination of structural and non-structural measures. In addition, the Army Corps' Silver Jackets program has

the special advantage of being able to bring together numerous other programs from within the federal family as well as state and locally-based programs to assist in addressing flood-related challenges. Also, WRDA 2020 has enhanced FPMS authority (see Sec. 111) and has broadly encouraged the Corps to utilize these techniques and approaches in flood risk management and community resiliency. Silver Jackets especially is continuing to build key linkages across governments that enhance cooperative approaches.

ASFPM members strongly urge that these technical assistance programs be funded at considerably higher levels than in the past. The FY 2022 final appropriations included \$9 million for Planning Assistance to States (PAS), \$12 million for Flood Plain Management Services (FPMS) and \$6.5 million for the National Flood Risk Management Program (NFRMP). The Silver Jackets funding is included in the funds for the NFRMP. We note that the Infrastructure Investment and Jobs Act included a one-time \$30 million and \$45 million appropriation for PAS and FPMS, respectively, to increase Corps technical assistance capability in the short term. We would urge a base level of funding for PAS at \$15 million, FPMS at \$25 million, and \$10 million for NFRMP in FY 2023 to expand the use and availability of these important authorities and assistance.

We also strongly recommend expanding Corps engagement with such programs for their major value in helping states and communities to reduce future losses due to flooding, especially where watershed development and effects of climate change are increasing flooding risks and costs. Many communities in many coastal and inland areas across the nation are already

experiencing and are anticipating increased flooding, erosion problems, and deteriorating water supplies from more frequent and intense rainfall events and coastal storms, rising sea levels, and increasing stormwater runoff and urban flooding from changing climate and land use changes in watersheds. To address these flooding problems, many communities need expert engineering, economic, environmental, and planning assistance and data to assess and help identify potential structural and/or non-structural solutions to their flooding problems.

Many smaller communities simply cannot afford to maintain such expertise in their local governments on a permanent basis and can benefit greatly from Corps of Engineers technical support. We note that only a few Corps Districts across the country have made use of these opportunities to bring Corps expertise to their communities outside the context of major Corps construction projects. Large numbers of communities lack the advantage to tap Corps expertise and support where and when it is often most needed and would be helpful and beneficial. We urge that Corps technical assistance be prioritized with dedicated staffing in each Corps District. We would urge the Subcommittee to consider report language supporting efforts at Corps Headquarters to educate Corps Districts regarding these programs and to encourage their use.

National Flood-related study provisions. We would also urge the Subcommittee to provide funding for two important WRDA-authorized studies. The Corps' **Water Resources Priorities Study**, begun in 2016, but thus far not complete, will assess the Nation's flooding vulnerabilities across all regions of the U.S. and analyze the effectiveness of programs, authorities, policies, roles, and activities for flood damage and flood risk reduction. This unique study, originally

authorized in WRDA 2007 (Section 2032) will provide Congress with a broad overview perspective of federal flood risk reduction programs and trends, including ways to potentially reduce costs by improving the effectiveness, efficiency, and accountability of existing programs and strategies. We have clearly witnessed an enormous increase in the nation's flood disaster impacts and costs. Average annual costs have grown from approximately \$4 billion in the 1980's to \$17 billion (2010 – 2018), and FEMA has recently estimated that total average national flood damages have risen (2009 – 2019) to \$39.3 billion, including both coastal and riverine impacts. Obviously, some years have witnessed damages far exceeding these levels. ASFPM believes such a study may be even more necessary today than when it was first authorized.

Additionally, for many of the same reasons, we would also urge the Committee to consider including funds for the Corps' **Review of Emergency Response Authorities** study, authorized in Section 3029(b) and (c) of WRDA 2014, including providing Congress and the public with required biennial reports on emergency repair and rehabilitation expenditures under the P.L. 84-99 program. We are increasingly concerned that there are many situations where federal taxpayers are repeatedly paying for the same levee and other flood control project repairs, and where improved flood damage reduction plans, such as voluntary buyout plans, identification of floodways, and levee setbacks and realignments, are necessary. These actions can make room for increasingly large flood volumes being experienced and should be developed to reduce disaster costs and improve floodplain and environmental management, simultaneously. Again, thank you for considering the Association's views. If you have questions or would like further information, please contact Chad Berginnis, ASFPM Executive Director, 608-828-3000.



**OUTSIDE WITNESS TESTIMONY
Fiscal-Year 2023 APPROPRIATION**

TO: The Honorable Marcy Kaptur, Chairwoman
The Honorable Mike Simpson, Ranking Member
House Appropriations Subcommittee on Energy and Water Development, and
Related Agencies

SUBJECT: Continued Funding for the Colorado River Basin Salinity Control Program under
Reclamation's Basinwide Program

FROM: Christopher S. Harris, Executive Director
Colorado River Board of California

DATE: May 19, 2022

This testimony is in support of Fiscal Year (FY) 2023 funding for the Department of the Interior for Title II Colorado River Basin Salinity Control Act of 1974 (P.L. 93-320), as amended. In the Act, Congress designated the Department of the Interior, Bureau of Reclamation (Reclamation) to be the lead agency for salinity control in the Colorado River Basin. Reclamation primarily implements salinity control through its Basinwide Program, established by Congress through an amendment to the Act in 1995. Funding levels for the Basinwide Program have fallen behind in recent years, and a funding level of \$10.7 million is requested to be provided in 2023 to prevent further degradation of the quality of Colorado River water supplies and increased economic damages. Under the Basinwide Program, Reclamation funds competitive proposals for projects which will decrease the salt load to the Colorado River. Most of the received proposals target off-farm irrigation distribution systems such as canals and laterals. The lining or piping of

May 19, 2022

Page 2 of 5

canals and laterals prevents leakage of water into the groundwater system and the dissolution and transportation of salts to the Colorado River and its tributaries.

The Colorado River System is used by approximately 40 million people for municipal and industrial purposes and used to irrigate approximately 5.5 million acres in the United States. Within Southern California, the Colorado River serves close to 20 million residents and 860,000 acres of irrigated agriculture, including municipal, industrial, and agricultural water users in Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura Counties. Natural and human-induced salt loading to the Colorado River creates environmental and economic damages. Reaches of the Colorado River in California are impaired for total dissolved solids, specific conductivity, and sodium. In 2020 Reclamation estimated the *quantifiable* economic damages from salt in the Colorado River at about \$354 million per year. Modeling by Reclamation indicates that these economic damages could rise to nearly \$671 million annually by the year 2040 without continued implementation of the Basinwide Program.

The Colorado River Board of California is the state agency charged with protecting California's interests and rights in the water and power resources of the Colorado River system. In this capacity, California participates along with the other six Colorado River Basin states in the Colorado River Basin Salinity Control Forum (Forum), the interstate organization responsible for coordinating the Basin States' salinity control efforts. In close cooperation with the U. S. Environmental Protection Agency (EPA) and pursuant to requirements of the Clean Water Act, the Forum is charged with reviewing the Colorado River's water quality standards every three years. Every three years the Forum also adopts a Plan of Implementation consistent with these

May 19, 2022

Page 3 of 5

water quality standards. The level of appropriation being supported by this testimony is consistent with the Forum's *2020 Plan of Implementation* for continued salinity control efforts within the Colorado River Basin. The Forum's *2020 Plan of Implementation* can be found on this website:

<https://coloradoriversalinity.org/docs/2020%20REVIEW%20-%20Final%20w%20appendices.pdf>.

If adequate funds are not appropriated to Reclamation's Basinwide Program, significant environmental and economic damages associated with increasing salinity concentrations in Colorado River water will become more widespread in the United States and Mexican portions of the Colorado River Basin. For example, damages occur from:

- A reduction in the ability and increased costs to reclaim and reuse water for consumptive beneficial use, including drinking water supply and irrigation, due to high salinities in the water delivered to water treatment and reclamation facilities;
- A reduction in the yield of salt sensitive crops, increased water use to meet the leaching requirements to maintain crop productivity, and additional actions necessary to comply with the Clean Water Act in the agricultural sector;
- Increased use of imported water and increased cost of desalination and brine disposal for recycling water in the municipal sector;

May 19, 2022

Page 4 of 5

- A reduction in the useful life of galvanized water pipe systems, water heaters, faucets, garbage disposals, clothes washers and dishwashers, and increased use of bottled water and water softeners in the household sector;
- An increase in the cost of cooling operations and the cost of water softening, and a decrease in equipment service life in the commercial sector;
- An increase in the use of water and the cost of water treatment, and a corresponding increase in sewer fees in the industrial sector;
- A decrease in the lifespan of treatment facilities and pipelines in the utility sector; and
- Difficulty in meeting wastewater discharge requirements to comply with National Pollutant Discharge Elimination System permit terms and conditions, and an increase in desalination and brine disposal costs necessary to minimize accumulation of salts in groundwater basins.

The *2020 Plan of Implementation*, as adopted by the Basin States and approved by EPA, calls for 62,400 tons of additional salinity control measures to be implemented by Reclamation, Natural Resources Conservation Service, and Bureau of Land Management by 2024, including approximately 9,000 tons of new salinity control measures each year by Reclamation. Over the past years, the Basinwide Program has proven to be a very cost-effective approach to help mitigate the impacts of increased salinity in the Colorado River. Adequate federal funding of this important Basinwide Program is essential. Based on current program cost levels, Reclamation's funding under its Basinwide Program must be at least \$10.7 million to meet those salinity control

May 19, 2022

Page 5 of 5

targets.

The Colorado River is, and will continue to be, a major and vital water resource to the nearly 20 million residents of southern California, including municipal, industrial, and agricultural water users in Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura Counties. The protection and improvement of Colorado River water quality through an effective salinity control program avoids additional economic and environmental damages to Mexico, California and the other states that rely on Colorado River water resources.

Thank you for your consideration of this testimony.

**FY2023 Recommendations:
House Appropriations Subcommittee on Energy and Water Development**

**Craig H. Piercy
Executive Director/CEO
American Nuclear Society¹
May 27, 2022**

On behalf of the 10,000 men and women of the American Nuclear Society (ANS), I am pleased to provide recommendations for FY2023 appropriations levels for nuclear programs under the Subcommittee's jurisdiction. The American nuclear community is grateful to the Committee for its continued, bipartisan support for federal investments to sustain our existing nuclear fleet and accelerate the near-term development and deployment of new nuclear energy technologies. Our recommendations are aligned toward a commercial scale-up of advanced nuclear reactors in the 2030 timeframe and consistent with the 2021 ANS report, "The U.S. Nuclear R&D Imperative."² For Fiscal Year, 2023, ANS recommends a minimum of **\$2.2 billion** for **Department of Energy (DOE) Office of Nuclear Energy (NE)** programs. We recognize this level of funding will present a challenge to the committee given its current 302(b) allocation. However, the Russian invasion of Ukraine has laid bare the immediate U.S. national security interest in strengthening our nuclear supply chain and reducing our reliance on Russian sources of nuclear fuel and R&D capabilities.

DOE Office of Nuclear Energy

Directed R&D and University Programs (FY2023 Recommendation: \$161 million)

ANS strongly supports the administration's request for this new programmatic structure, which consolidates NE funding for universities (and small businesses) into a unified program that will provide stewardship for university-based nuclear education programs, campus research reactors, and start-up companies. While still tightly aligned with Departmental missions, this new structure will eliminate the need to "tax" existing NE

¹ The American Nuclear Society is the premier organization for those who embrace nuclear science and technology for their vital contributions to improving people's lives and preserving the planet. ANS membership is open to all and consists of individuals from all walks of life; including engineers, doctors, students, educators, scientists, soldiers, advocates, government employees, and others. ANS is committed to advancing, fostering, and promoting the development and application of nuclear sciences and technologies to benefit society.

² ANS Task Force on Public Investment in Nuclear Research and Development (Feb. 2021). *The U.S. Nuclear R&D Imperative* (pp. 1-39, Rep.) <https://www.ans.org/file/3177/2/ANS%20RnD%20Task%20Force%20Report.pdf>

programs to provide the funding needed required for effective stewardship of nuclear education and research at U.S. universities.

ANS STRONGLY opposes the inclusion of any congressional earmark in this account. While we are mindful of Congress' power of the purse, the inclusion of project-specific earmarks at this time would effectively gut this new program before it has a chance to become established, negatively impacting existing competitively awarded projects, and inflicting tangible damage to America's overall nuclear competitiveness.

Advanced Reactor Demonstration Program (ARDP) (FY2023 Recommendation: \$245 million)

Demonstrating the next generation of advanced reactors will support both domestic deployment and export of U.S. technology and enable broad U.S. leadership in new and innovative advanced nuclear technologies. For FY2023 ANS recommends \$140 million for Risk Reduction for Future Demonstrations, \$85 million for NRIC, \$15 million for Regulatory Development, and \$5 million for Advanced Reactor Safeguards.

Advanced Nuclear Fuel Availability Program (FY2023 Recommendation – \$360 million: \$300 million for commercial enrichment and deconversion capacity and \$60 million for downblending of HEU)

Consistent with the Energy Act of 2020, it is imperative that DOE establish a competitive commercial high-assay low-enriched uranium (HALEU) fuel supply chain in the U.S. The urgency is real. Russia can no longer be considered a feasible HALEU supplier. Without a reliable HALEU supply, lead commercial customers will be less likely to make commitments to build advanced reactors. We recognize the administration has not yet submitted a comprehensive plan to address HALEU needs, but there is increasing consensus within the U.S. nuclear community that a \$300-400 million level of investment will be required to stimulate sufficient commercial interest. Therefore, ANS requests \$300 million for FY2023 to support the deployment of a U.S. commercial HALEU supply chain and \$60 million for the fresh HEU downblending bridge program.

High Enriched Uranium Recovery for HALEU (EBR-II) (FY2023 Recommendation: \$25.75 million)

ANS recommends \$25.75 million to transition EBR-II spent fuel processing operations in order to meet the increasing needs of industry.

Fuel Cycle R&D; Fuel Cycle Laboratory R&D (FY2023: Recommendation \$35 million)

ANS recommends not less than \$20 million for metallic fuels and \$15 million for additional fuel cycle laboratory R&D.

Accident Tolerant Fuels (FY2023 Recommendation: \$165 million)

ANS recommends \$120 million for continued participation of the industry-led teams in the cost-shared R&D program including support for testing, code development, and licensing of ATF with higher fuel utilization. ANS also recommends \$10 million to continue silicon-carbide development and \$35 million for laboratory specific work in support of ATF.

TRISO Fuel and Graphite Qualification (FY2023 Recommendation: \$37 million)

Versatile Test Reactor (FY2023 Recommendation: \$45 million)

Currently, the only fast research reactor available is located in Russia. While the VTR may not be necessary for near-term licensing of certain advanced reactors, the Committee must recognize that a fast neutron irradiation facility remains mission critical for sustaining U.S. advanced nuclear energy in the long-term. We believe NE should use some portion of the requested funding to explore the potential cost savings of aligning VTR component fabrication with Sodium ARDP project and, in concert with the DOE Office of Science, assess opportunities for producing isotopes for which the U.S. currently relies on Russia for significant supply.

Light Water Reactor Sustainability (FY2023 Recommendation: \$62 million)

ANS recommends \$62 million to enable this program to accelerate LWR modernization efforts while continuing to support hydrogen demonstrations. ANS also requests that no less than \$12 million be used to support new or previously awarded hydrogen demonstration projects.

Advanced SMR R&D Support (FY2023 Recommendation: \$211 million)

Demonstrating the next generation of advanced light water small modular reactors will support both domestic deployment and export of U.S. technology and enable broad U.S. leadership in new technologies.

Nuclear Waste Disposal / Integrated Waste Management (FY2023 Recommendation: \$53 million)

ANS supports the requested level for these programs, recognizing that DOE's authority to make progress on centralized interim storage of spent nuclear fuel is limited under current law.

Program Direction (FY2023 Recommendation: \$100 million)

The management responsibilities that come with DOE NE program additions have increased substantially over the past several years while staffing levels have reduced and Program Direction funding has remained consistent. This convergence has created challenges in many areas, including contracting management and program execution. ANS recommends \$100 million for FY2023 which will allow DOE NE to add experienced staff and address current staffing deficiencies.

International Nuclear Energy Cooperation (FY2023 Recommendation: \$8 million)

The Office of Nuclear Energy plays a critical role in facilitating international nuclear energy cooperation. With nearly 30 countries considering nuclear energy for the first time and many others considering expanding their nuclear energy programs to meet their clean energy and energy security goals; providing the International Nuclear Energy Cooperation program with sufficient funding to meaningfully engage potential partner countries will ensure greater international adoption of U.S. advanced energy technologies.

Advanced Reactor Technologies (FY2023 Recommendation: \$70 million)

The Advanced Reactor Technologies subprogram conducts essential R&D activities to reduce technical risks associated with advanced reactor technologies and systems. The subprogram R&D scope reflects input from advanced reactor stakeholders with a goal of enabling industry to mature and ultimately demonstrate advanced reactor technologies by the 2030s. ANS recommends \$70 million total for the subprogram, with \$16 million for the microreactor program and \$20 million for the MARVEL reactor. The MARVEL reactor will support fuel acquisition and construction in FY2023. ANS also recommends \$15 million for the ARC-20 program.

DOE Office of Clean Energy Demonstrations

Advanced Reactor Demonstrations (FY2023 Recommendation: \$70 million)

While passage of the 2021 Infrastructure and Jobs Act provided funding for the

Advanced Reactor Demonstration Program (ARDP); the bill did not entirely fund both demonstration projects. ANS recommends an additional \$70 million for continued ARDP support.

DOE Office of Science

Isotope R&D and Production Program (FY2023: \$102 million)

ANS strongly supports DOE's Isotope program and its missions to produce isotopes in short supply, manage DOE inventories of stable and long-lived isotopes, and conduct research and development activities on new isotope applications in medicine and industry. In addition to isotopes produced in DOE reactors and accelerators, there are new opportunities to use DOE legacy materials, such as strontium 90 for space and undersea applications, that were once considered waste. The DOE Isotope office should have the authority and resources it needs to facilitate the beneficial commercial use of these materials.

Low-Dose Radiation Program (FY2023 Recommendation: \$20 million to support low-dose radiation research activities)

Through recent congressional direction, the Department of Energy's Office of Science Biological and Environmental Research is to re-establish a research program devoted to the human health effects of low-dose radiation at a funding level of no less than \$5 million. To maintain progress in FY2023, and with the imminent release of the National Academies of Sciences guidance report on the development of a long-term strategy for low-dose radiation research in the U.S., ANS recommends \$20 million for the program. Expanded funding will allow for new technologies and approaches for examining biological mechanisms by which ionizing radiation produces cancer and non-cancer health outcomes, and the integration of mechanistic biological insights with epidemiological data. This funding is also needed to support interdisciplinary training and integrated cross-professional research programs devoted to understanding and quantifying radiation health effects at low doses. The program will also support education and outreach activities to disseminate information and promote public understanding of low-dose radiation.



American Society of Plant Biologists

Cultivating a better future through plant biology research

Official Written Testimony Submitted by Crispin Taylor, CEO of the
American Society of Plant Biologists
May 27, 2022

Prepared for the Subcommittee on Energy and Water Development and Related Agencies
Committee on Appropriations
U.S. House of Representatives

Addressing the Department of Energy's Office of Science and Advanced Research Projects Agency-Energy Fiscal Year 2023 Budget

On behalf of the American Society of Plant Biologists (ASPB), we submit this written testimony to support **\$8.8 billion** for the **Department of Energy's (DOE) Office of Science** in fiscal year (FY) 2023. Within this amount, ASPB supports proportional increases in funding for the Office of **Basic Energy Sciences (BES)** and the Office of **Biological and Environmental Research (BER)**. ASPB also supports at least **\$575 million** for the **Advanced Research Projects Agency-Energy (ARPA-E)** in FY 2023.

The following testimony highlights the importance of biology—particularly plant biology, which is a major backbone of efforts to enhance bioenergy production—as the nation seeks to address energy security and other vital issues. We thank the Subcommittee for its consideration of this testimony and for its support for the basic research mission of the DOE Office of Science.

ASPB, founded in 1924 as the American Society of Plant Physiologists, was established to promote the growth and development of plant biology, to encourage and publish research in

plant biology, and to promote the interests and professional advancement of plant scientists in general. ASPB members educate, mentor, advise, and nurture future generations of plant biologists; they work to increase understanding of plant biology, as well as science in general, in K-16 schools and among the general public; they advocate in support of plant biology research; they work to convey the relevance and importance of plant biology; and they provide expertise in policy decisions world-wide.

Fuel, Food, Environment, and Health: Plant Biology Research and America's Future

Plants are vital to our very existence. They harvest sunlight, converting it to chemical energy for food and feed; they take up carbon dioxide and produce oxygen; and they are essential to life on Earth. Indeed, plant biology research is making many fundamental contributions in the areas of domestic fuel security and environmental stewardship; the continued and sustainable development of better fuels, foods, fabrics, pharmaceuticals, and building materials; and in the understanding of basic biological principles that underpin improvements in plant growth and home-grown energy sources for all Americans.

Plant biology is at the center of numerous scientific breakthroughs in the increasingly interdisciplinary world of alternative energy research. For example, researchers at National Renewable Energy Laboratory (NREL) published research that demonstrates the ability to convert wet waste carbon (food waste derived from fatty acids) to sustainable aviation fuels—highlighting the potential to meet aviation needs and environmental challenges. Similarly, with the increase in plant genome sequencing and functional genomics, the interface of plant biology and computer science has become essential to our understanding of complex biological systems,

ranging from single cells to entire ecosystems. This research is critical for our future in bioenergy production.

Even though foundational and mission-oriented plant biology research—the kind of research DOE funds—underpins vital advances in practical applications in energy, health, and the environment, plant scientists have had to maximize and leverage modest federal funding to understand the basic function and mechanisms of plants. Strong investments in plant biology research are important considering the significant positive impact crop plants have on the nation’s economy and in addressing some of our most urgent challenges, like energy and food security. For example, continued basic and applied research in fields like synthetic biology will enable the creation and production of more energy dense, carbon neutral fuels and expand the production of energy-efficient biomass¹.

Securing the Plant Science Talent Pipeline

As discussed above, many of the challenges brought by a changing world will be addressed specifically by plant scientists. A significant increase in crop productivity will be needed to match the demand for food expected from the rate of population growth. At the same time, climate change will present new trials for crops and other plant ecosystems. These challenges will require efforts to increase productivity beyond current practices, including improvement in crop water use efficiency and enhanced crop photosynthesis efficiency and performance, to name just a few approaches. More knowledge and innovation will be needed to replace chemicals from non-renewable sources (from fuels to biomedical applications) with plant-derived metabolites.

¹ <https://roadmap.ebrc.org/energy/>

These types of innovations will require contributions from basic and applied plant science fields and collaboration from other sciences and engineering.

To tackle these challenges, a strong and diverse community of plant scientists, with increased involvement from women and minority scientists, will be needed. However, the current training pipeline is not primed to ensure the availability of this workforce. Plant science doctoral degrees, both basic and agronomy-related, have remained stagnant over the past two decades. A strong investment in plant science research, both basic and applied, renewed efforts to transform public perception of plant biology and plant biologists, and a push to increase the number of students entering the pipeline leading to plant science degrees are necessary to change these trends. Developing the workforce that will contribute the solutions to future challenges is urgent. With this need in mind, ASPB applauds the awards DOE has made in training the next generation of scientists. However, more efforts, including outreach to and investments in women and minority researchers, is vital for the US to maintain its energy leadership.

DOE Recommendations

Because the ASPB membership has extensive expertise and participation in the academic, industry and government sectors, ASPB is in an excellent position to articulate the nation's plant science priorities as they relate to fundamental plant biology and, specifically, with respect to recommendations for bioenergy research funding through DOE's Office of Science.

The BER and BES programs within the Office of Science are crucial to understanding how basic biological processes work. Sustained funding for these programs is vital because the discoveries made in these areas will ultimately be the foundation for the next fuels and

technologies we use in our daily lives. Support from ARPA-E is critical to advancing plant synthetic biology technologies, and ASPB implores the committee to include sustained, targeted funding for synthetic biology research in the program.

In addition:

- We commend the DOE Office of Science, through its programs in BES and BER, for having funded the Bioenergy Research Centers and the Energy Frontier Research Centers. ***ASPB strongly encourages additional funding for the DOE Office of Science that would specifically target funding toward individual and small-group grants for bioenergy and plant growth research.***
- Considerable research interest is now focused on processing plant biomass for energy production. Fundamental discoveries of the genes that control plant growth and enable plant growth in response to stresses, including drought, are needed to secure our energy future. If biomass crops, including woody plants, are to be used to their full potential, extensive effort must be expended to improve our understanding of their basic biology and development, as well as their agronomic performance and conversion efficiency in processing to fuels and high-value co-products. ***Therefore, ASPB calls for DOE to support research targeted at efforts to increase the utility and agronomic performance of bioenergy feedstocks, both in the field and for their end users in the bioeconomy.***

Thank you for your consideration of our testimony on behalf of the American Society of Plant Biologists. For more information about the American Society of Plant Biologists, please see www.aspb.org.

Testimony of the Society for Science at User Research Facilities to the House Committee on
Appropriations Subcommittee on Energy and Water Development, and Related Agencies
Concerning Fiscal Year 2023 Appropriations

Submitted for the Record, May 27, 2022

By: Dan Powers, Executive Director, Society for Science at User Research Facilities

To:

The Honorable Rosa DeLauro, Chair, House Appropriations Committee

The Honorable Kay Granger, Ranking Member, House Appropriations Committee

The Honorable Marcy Kaptur, Chairwoman, Subcommittee on Energy and Water Development,
and Related Agencies

The Honorable Michael K. Simpson, Ranking Member, Subcommittee on Energy and Water
Development, and Related Agencies

The Society for Science at User Research Facilities (SSURF) is grateful for this opportunity to submit testimony to the House Appropriations Subcommittee on Commerce, Justice, Science, and Related Agencies Concerning Fiscal Year (FY) 2023 Appropriations. SSURF advocates for the network of scientists, engineers, educators, and students across the nation's network of crucial Scientific User Facilities at the Department of Energy (DOE) National Laboratories. The scientific breakthroughs and discoveries at these facilities are foundational to ensuring the health, safety and prosperity of the United States.

The President's FY 2023 Budget Request for DOE and the National Nuclear Security Administration (NNSA) demonstrates responsible and reasonable support for our country's scientific research enterprise. We are encouraged that the budget provides funding to support the mission of Scientific User Facilities and their hosting institutions, such as the proposed 4.5% funding increase to the DOE Office of Science and 8.5% increase for the NNSA.

However, we strongly believe additional funding is needed for existing research infrastructure, scientific advancements, and human resources to maintain the sophisticated projects at many facilities. In recent years inflation has outpaced appropriations for scientific user facilities at DOE. Therefore, we encourage you to provide additional support for DOE and NNSA to at least match the level of inflation. Therefore, we support the goal of building on this budget's spirit of support for science by emphasizing the critical need to include increased funding support for existing research infrastructure. The global competitive realities in advanced technologies and especially significant funding in research by China means we are at risk of being outpaced (we have already fallen behind in some respects) and losing our international scientific leadership position.

The United States' investments in fundamental scientific research and the applications of scientific discoveries have profoundly benefited our country in realms of energy, food production; public health, transportation, national security, genomics, computing, environmental protection, and communications.

A visionary investment in the most cutting-edge scientific technologies is critically important to ensuring a successful recovery from the global pandemic. We have benefited in incalculable ways over decades by investing in our own brilliance potential. We must not cede scientific discovery leadership with lukewarm investments in our existing Scientific User Facility technologies.

We are proud to champion the value of Scientific User Facilities who have provided foundational needs for so many advancements. For example:

- Researchers from across the country, including the pharmaceutical industry, use the ultra-bright, high-energy X-rays provided by Dept. of Energy light source laboratories including as Argonne National Laboratory's Advanced Photon Source, Lawrence Berkeley National Laboratory's Advanced Light Source and the SLAC National Accelerator Laboratory at Stanford University (among others) to determine protein structures of the SARS-CoV-2 virus, making COVID-19 vaccines more effective and advancing the development of treatments.
- Chemists with the Environmental Molecular Sciences Laboratory at the Pacific Northwest Laboratory have discovered plant proteins with the potential to transform biofuels production.
- Idaho National Laboratory physicists and computer scientists vigilantly protect the nation's energy systems including the power grid, oil and gas pipelines, and renewable technology from physical or cyberthreats.

- Oak Ridge National Laboratory researchers used the nation's fastest supercomputer (the "Summit") to map the molecular vibrations of an important but little-studied uranium compound produced during the nuclear fuel cycle for results that could lead to a cleaner, safer world.
- Scientists and researchers with ESnet at Lawrence Berkeley National Laboratory, Berkeley Lab's Applied Mathematics and Computational Research Division and the National Center for Atmospheric Research discovered via advanced computer modeling the role of climate change regarding the intense 2020 hurricane season
- Lawrence Livermore National Laboratory's National Ignition Facility recently succeeded in an ignition experiment achieving a yield of more than 1.3 megajoules. This advancement puts researchers at the threshold of fusion ignition opening a fundamentally new regime for exploration and the advancement of our critical national security missions.

The impact of inflation on operating budgets at federal Scientific User Facilities cannot be overstated. The funding needed to keep pace with upgrades, existing maintenance requirements and the cost of qualified staffing recruitment and retention at Scientific User Facilities is cause for dire concern. Investments to upgrade and sufficiently maintain our scientific infrastructure across the network of federal laboratories and partner institutions needs to be recognized as a fundamental component in our country.

The spectrum of DOE research laboratories is a crucial resource to the nation: the scientific discoveries emerging from these laboratories are shaping our ability to meet the most

challenging issues facing humanity. The partnerships these laboratories consistently nurture with academia and the private sector leverage taxpayer funding with broad impacts in job creation, knowledge sharing and problem solving.

We are available to discuss these topics further as requested. Thank you for your consideration of this perspective to help make our nation's scientific enterprise robust and ensure we maintain our global leadership position in science.

About SSURF:

The Society for Science at User Research Facilities (SSURF) is a non-profit professional society working to promote and serve the interests of the user science community. SSURF's mission is to provide a consolidated voice for those engaged in, supporting, and/or interested in research conducted by Users of America's national scientific research facilities. See more at www.ssurf.org.

Federal Performance Contracting Coalition (FPCC)

Dane Farrell – Director, Government Affairs

Outside Witness Testimony Addressing the U.S. Department of Energy

**Prepared for The U.S. House of Representatives Appropriations Subcommittee on Energy
and Water Development and Related Agencies**

May 27, 2022

Chair Kaptur, Ranking Member Simpson, and members of the Subcommittee, as you deliberate on the important programs to be funded in the FY23 appropriations bills, we respectfully request that \$100 million be allocated to the Federal Energy Management Program (FEMP) within the Office of the Under Secretary Infrastructure (formerly within the Office of Energy Efficiency and Renewable Energy) at the U.S. Department of Energy (DOE), with \$60 million designated to the Federal Energy Efficiency Fund, also known as Assisting Federal Facilities with Energy Conservation Technologies (AFFECT) grant program. We also request the following report language be included:

“The Committee recommends \$100,000,000 for the Federal Energy Management Program. The recommendation provides not less than \$60,000,000 for the Department to continue its work through the Assisting Federal Facilities with Energy Conservation Technologies (AFFECT) program. The Committee directs FEMP to continue requiring all AFFECT grant funding to be leveraged through private sector investment in federal infrastructure to ensure maximum overall investment in resiliency, efficiency, emissions reductions, and security. Funding should be directed to projects that attract at least ten dollars for each federal dollar invested and that utilize public-private partnerships like energy savings performance contracts (ESPCs) and utility energy service contracts (UESCs).”

In FY2022, Congress graciously directed \$20 million for the AFFECT program. This small amount of funding allows agencies to continue to address resiliency as well as backlog maintenance, critical upgrade and maintenance needs, and other infrastructure on our federal sites such as military bases, VA hospitals, and GSA buildings. The FPCC knows that we can address such critical infrastructure needs using fewer dedicated federal dollars through performance contracting, and the AFFECT program facilitates just that.

The FPCC believes that using just a nominal amount of appropriated dollars for critical priorities such as cybersecurity, resiliency, and net-zero/deep energy efficiency retrofits will net:

- Additional private-sector dollars invested in the federal government,
- Improved federal facility resiliency,
- Significant energy cost savings,
- Emissions reductions while addressing critical infrastructure failures, and
- Enhanced attention to ongoing operations and maintenance and regular equipment replacement costs

In fact, fewer dollars need to be appropriated overall if they are leveraged with private sector dollars. Leveraging allows precious federal resources to focus on core mission objectives and transfers project execution risk to the private sector.

FEMP is the appropriate place for these dollars as they will be available to leverage performance contracting for all federal agencies. FEMP has provided small amounts of appropriated dollars to leverage performance contracting through the AFFECT grant program for the past several years. The \$11 million appropriated in FY2021 resulted in DOE investing a total of \$13 million in AFFECT funding in 17 federal agency projects that, when combined with the investment from the private sector, are expected to surpass \$737 million in infrastructure

improvements. Congress further recognized the benefit of this program by providing it with \$250 million in one-time funding through the bipartisan infrastructure law – and make no mistake: when considering the substantial amount of derelict and outdated infrastructure in federal facilities, these dollars are needed more than ever to meet requirements to improve energy and water utilization and site resiliency. Performance contracting projects, which focus on new technologies and resiliency, will help agencies across the federal government address backlog maintenance, which the Office of Management and Budget (OMB) estimates is \$174 billion government-wide. At a minimum, it would specifically address the \$7.2 billion in cost-effective energy-related backlog maintenance already identified in Congressionally mandated audits (EISA 2007, Section 432), which must now be addressed after the passage of the Energy Policy Act of 2020.

FEMP, with minimal funding, supports all agencies of the federal government in their quest to become more efficient, resilient, and secure and to reduce greenhouse gas emissions. The FEMP function of assisting all federal agencies allows them to achieve these goals while saving money for the American taxpayer, improving aging infrastructure, and addressing deferred maintenance. FEMP also plays the critical role of trainer, facilitator, and honest broker for all federal facilities wishing to address necessary facilities- and energy-related infrastructure.

As the single largest U.S. energy consumer with more than 360,000 buildings and structures comprising 3 billion square feet, the federal government has a significant opportunity and responsibility to lead by example through demonstrating and deploying energy and water conservation best practices and technology solutions. FEMP is at the forefront of responding to Administration priorities, statutory requirements, and Federal agency needs while helping to maintain resilient, efficient, and secure installations for mission assurance. FEMP assists federal

agencies with various needs, including technology development and integration, infrastructure improvements, energy project development and implementation assistance, and workforce development.

Energy Savings Performance Contracts (ESPCs) and Utility Energy Service Contracts (UESCs) are alternative financing methods created by Congress that utilize private sector resources and capabilities to complete federal energy projects. Under an ESPC, a private company finances and implements an energy savings project for a federal agency, measures and verifies that the installed measures are working as promised, and guarantees that energy savings will accrue. The private sector is then repaid over time through the savings on the customer's utility bill. As such, these contracts allow federal agencies to address critical maintenance backlogs and infrastructure needs with no added expenditures by the Federal government. According to FEMP, DOE IDIQ ESPC projects have achieved over \$17.7 billion in guaranteed energy savings across the federal government and generated investments of \$7.8 billion in federal energy efficiency and renewable energy improvements. These projects have resulted in approximately 615 trillion Btu in life cycle energy savings for the federal government, demonstrating their effectiveness as a tool to improve the nation's energy independence and security posture.

FEMP's role is essential. It provides training, guidance, and technical assistance to help agencies achieve their energy, water, and carbon reduction goals. Additionally, FEMP provides oversight of every ESPC for the life of the contract. Because agencies are short on personnel, this is a critical function to ensure dollars are well spent and maximize environmental impact. Utilizing performance contracting to address infrastructure improvements instead of using appropriated funds for direct services is a commonsense approach that reduces risk to the federal

government and ensures that projects are well managed since the private sector partner must guarantee performance to get paid.

In past years, when appropriated dollars have been scarce, FEMP funding has leveraged between \$800 million and \$1.4 billion in private investment in federal infrastructure with no added cost to the federal government, using money from existing funding streams. A 2013 report by the Oak Ridge National Laboratory (ORNL) titled *Beyond Guaranteed Savings: Additional Cost Savings Associated with ESPC Projects* found that for a typical ESPC, the actual cost savings to the federal government is 174% to 197% of the guaranteed savings by the contractor.

The members of the Federal Performance Contracting Coalition (ABM, AECOM, Ameresco, CEG Solutions, Constellation, Energy Systems Group, Honeywell, Johnson Controls Inc., NORESO, Schneider Electric, Siemens, Southland Energy, and Trane) know firsthand how impactful ESPCs are in saving energy costs, taxpayer money, and creating jobs in every state in the country. Our members represent approximately 90% of the Energy Savings Performance Contracts (ESPCs) in federal facilities. They are committed to working with Congress and the Administration to facilitate more, faster, bigger, and better ESPC projects. Thank you for your consideration of our request.

**Written Testimony of Dante Desiderio
CEO of the National Congress of American Indians
For the House Committee on Appropriations,
Subcommittee on Energy and Water Development and Related Agencies
May 27, 2022**

On behalf of the National Congress of American Indians (NCAI), thank you for this opportunity to provide testimony on FY 2023 funding for the Department of Energy (DOE), Department of Defense (DOD) – U.S. Army Corps of Engineers (USACE), and Department of the Interior (DOI) – Bureau of Reclamation (BOR), involving our recommendation of \$408.84 million in funding.

A 2007 report by Dr. Theodore Jojola, Ph.D, developed for the NCAI Policy Research Center, found that underinvestment in physical infrastructure not only harms the social, physical, and mental wellbeing of tribal communities, but also impairs the ability of tribal communities to thrive.¹ Physical infrastructure reinforces and shapes the socio-cultural and political milieu of the community and plays a role in competitively positioning the economy of its enterprises for capital gain.² The provision and placement of basic utilities for the adequate provision of drinking water, sanitation, and electricity are considered fundamental for the physical and mental health of communities as well as being a measure of the overall quality of life.³ Further, there is a strong link between physical infrastructure and economic development.⁴

Unfortunately, the conditions noted by Dr. Jojola in 2007 have persisted, with the U.S. Commission on Civil Rights (USCCR) finding in 2018 that the efforts undertaken by the federal

¹ NCAI Policy Research Center, *Physical Infrastructure and Economic Development*, May 2007, 3-4, available at: https://www.ncai.org/attachments/PolicyPaper_OAYcOPFdNTxazqxAOZGlmEXOHFGoAnZlOepYZcUnSqRGgoWUTLp_Jojola%20and%20Gover%20FINAL%20FORMATTED%205.8.07.pdf, accessed on: May 25, 2022.

² *Id.* at 2.

³ Office of the United Nations High Commissioner for Human Rights, *The Human Right to Adequate Housing*, Fact Sheet No. 21/Rev.1, available at: https://www.ohchr.org/sites/default/files/Documents/Publications/FS21_rev_1_Housing_en.pdf, accessed on: May 25, 2022.

⁴ *Physical Infrastructure and Economic Development* at 2.

government from its initial 2003 report to 2018 have resulted in only minor improvements, at best; and in some respects, the U.S. Government has backslid in its treatment of Native Americans.⁵ Specifically, the USCCR report notes that many Native Americans face unique challenges and harsh living conditions resulting from the United States having removed their Tribal Nations to locations without access to adequate resources and basic infrastructure upon which their tribal governments can foster thriving communities.⁶ In its 2003 report, USCCR summarized the funding shortfall to which Native Americans were subjected stating that, “laws and policies are meaningless without resources to enforce them. Resources are an important demonstration of the U.S. government’s commitment to its responsibilities, including the obligation to preserve civil and other rights . . . [u]nder-funding violates the basic tenets of the trust relationship between the [federal] government and Native peoples and perpetuates a civil rights crisis in Indian Country.”⁷

Cross-referencing Office of Management and Budget (OMB) Native American Crosscut data with Appropriations Committee reports reveals that FY 2022 spending for Native American programs represents approximately 0.49% of total regular appropriations budget authority within this Subcommittee’s jurisdiction. With federal investment metrics such as these, it is no surprise that Indian Country is in a state of catastrophe by national standards.

Despite this chronic underinvestment, Indian Country is an important economic driver in the U.S. Economy.⁸ Collectively, Tribal Nations comprise the 13 largest employers in the United States, with tribal businesses employing more than 700,000 employees, providing economic

⁵ U.S. Commission on Civil Rights, *Broken Promises: Continuing Federal Funding Shortfall for Native Americans*, 3-4, available at: <https://www.usccr.gov/files/pubs/2018/12-20-Broken-Promises.pdf>, accessed on: May 25, 2022.

⁶ *Id.* at 1.

⁷ *Id.* at 2.

⁸ Patrice H. Kunesh, *Getting real about Indian Country – surprising progress in the heartland*, <https://indiancountrytoday.com/opinion/getting-real-about-indian-country-surprising-progress-in-the-heartland>, Accessed: April 6, 2022.

opportunity for both Native and non-Native workers.⁹ Evidence indicates that where Tribal Nations are successful with economic development that poverty rates and other health issues are lower, while educational outcomes and real per capita income are higher.¹⁰ Further, revenue generated on tribal lands results in a spillover effect that supports local workforces and generates tax revenue.¹¹ As such, an investment to promote the building blocks of physical infrastructure in Indian Country is an investment in America for all Americans.

Department of Energy: Cross-referencing OMB Native American Crosscut data with Appropriations Committee reports reveals that spending for Native American programs represents approximately 0.19% of total FY 2022 regular appropriations budget authority for DOE within this Subcommittee's jurisdiction. By comparison, for every \$100 appropriated to DOE, less than two dimes go to Indian Country. While this statistic is shocking, the FY 2022 omnibus represents more than twice the investment in DOE Native American programs as the previous two years and more than four times the investment of FYs 2018 and 2019. This does not mean that tribal programs are now adequately funded – it is a signal that funding for tribal programs at DOE has been so woefully inadequate for so long that even increasing funding by four times still only equals a fraction of a penny of every dollar appropriated to the Agency by this Subcommittee.

In order to address these funding deficiencies, this Subcommittee should provide at least \$150 million for the Office of Indian Energy Policy and Programs, including resources for the feasibility studies, assessments, planning, and financial and technical assistance necessary to create a pipeline of projects for underutilized programs with prohibitive cost barriers such as the Tribal Energy Loan Guarantee Program (TELGP); at least \$2.5 million for TELGP credit subsidies and

⁹ *Id.*

¹⁰ *Id.*

¹¹ *Id.*

\$2 million for TELGP Administrative Costs; \$15.9 million for the Office of Legacy Management Legacy Sites in and around Indian Country; and \$5.3 million for the National Nuclear Security Administration's Tribal College and University Advanced Manufacturing Initiative.

Bureau of Reclamation: Indian water rights are vested rights and resources for which the United States has a trust responsibility. The U.S. Supreme Court first recognized Indian water rights in *Winters v. United States* in 1908.¹² Under the *Winters* doctrine, when Congress reserves land, Congress implicitly reserves water sufficient to fulfill the purpose of the reservation and the water rights of tribes often are senior to non-Indian water rights holders.¹³ In *Arizona v. California*, the Supreme Court ruled that Tribal Nations have rights to enough water to cultivate every irrigable acre on a reservation.¹⁴ However, despite the priority of Indian reserved water rights, non-Indian populations frequently have greater access to and allocations of water through infrastructure, leading to disputes that typically have been litigated and/or resolved by negotiated settlements.¹⁵ The adjudication of these rights is complex and costly for Tribal Nations, spanning an average of 22 years.¹⁶ The Infrastructure Investments and Jobs Act of 2021 (IIJA) established the Indian Water Rights Settlement Completion Fund to satisfy tribal water settlement obligations as authorized by Congress, along with the mandatory funding for Indian water rights settlements from the Reclamation Water Settlement Fund authorized through FY 2029;¹⁷ however, the amount does

¹² *Winters v. United States*, 207 U.S. 564, 575-77 (1908).

¹³ See *Winters v. United States*.

¹⁴ *Arizona v. California*, 373 U.S. 546 (1963).

¹⁵ Congressional Research Service, *Bureau of Reclamation: History, Authorities, and Issues for Congress*, R46303, available at: <https://crsreports.congress.gov/product/pdf/R/R46303>, accessed on: May 26, 2022.

¹⁶ L. Sanchez, E. Edwards, and B. Leonard, *Beyond "paper" water: The complexities of full leveraging tribal water rights*, available at: <https://www.minneapolisfed.org/article/2022/beyond-paper-water-the-complexities-of-fully-leveraging-tribal-water-rights>, accessed on: May 25, 2022.

¹⁷ Bureau of Reclamation, *FY 2023 Congressional Justification, Permanent Appropriations – 5*, available at: <https://www.usbr.gov/budget/2023/FY-2023-Bureau-of-Reclamation-Budget-Justifications.pdf>, accessed on: May 26, 2022.

not include the cost of ongoing operation requirements for existing settlements and excludes future water settlements or court orders.¹⁸

BOR has trust and treaty obligations to Tribal Nations to promote and protect their water rights.¹⁹ This Subcommittee must provide at least \$34 million for ongoing operational needs of Indian water settlements in FY 2023; at least \$100 million for developing, managing, and protecting tribal water and related resources; and work with authorizing committees to provide a permanent mandatory funding solution for future Indian water rights settlements and for the operation and maintenance of previously enacted Indian water rights settlements.

U.S. Army Corps of Engineers: USACE implements the Tribal Partnership Program (TPP), which provides an opportunity to assist with water resources projects that address economic, environmental, and cultural resource needs including flood damage reduction, environmental restoration, and protection and preservation of natural and cultural resources. Tribal relations with USACE have been historically contentious as well as under-resourced, leading to the underutilization of TPP. Congress should provide \$17 million for the TPP with at least \$5 million for investigations and \$12 million for construction and provide \$3 million for the Tribal Nations Program—which implements the Army Corps’ Tribal Policy Principles—to conduct outreach, consultation, and improve partnerships and relations with Tribal Nations.

Conclusion: Tribal Nations have paid for every penny obligated to Indian Country hundreds of times over by providing this Nation with our land. In order to uphold this Nation’s promises to its people, it must first uphold its promises to this land’s First Peoples. We must continue down the path of Nation-to-Nation growth, so that all of our people may flourish.

¹⁸ *Id.* at General Statement – 2.

¹⁹ See *Generally Seminole Nation v. United States*, 316 U.S. 286 (1942); *Winters v. United States*; *Arizona v. California*.

**FY2023 Written Testimony for the Record
Weatherization Assistance Program
Department of Energy**

**David Bradley, Chief Executive Officer
National Community Action Foundation**

Chairwoman Kaptur, Ranking Member Simpson and Members of the Subcommittee: Thank you for this opportunity to present the views of the National Community Action Foundation on FY2023 appropriations for the **Weatherization Assistance Program (WAP)**, which is administered by the **Department of Energy (DOE)**. We urge the Subcommittee to provide the following for the FY2023 Weatherization Assistance Program: **the funding requested in the President's budget for the core program at no less than \$362.2 million and \$90 million for the Weatherization Readiness Fund for a total of \$452.2 million**. To the extent that budget constraints make this recommendation difficult, we urge you to prioritize funding the Weatherization Readiness Fund. We also urge the Subcommittee to reject the proposed "LIHEAP Advantage" \$100 million project for reasons we outline below and to provide guidance to Department of Energy regarding better integration of the program funded in this appropriation with the soon-to-be-initiated program funded by the Infrastructure Investment and Jobs Act.

The National Community Action Foundation represents the nation's local Community Action Agencies known as CAAs which make up 81 percent of the local agencies that are funded by the Weatherization Assistance Program to recruit and evaluate eligible homes and to install the appropriate set of efficiency measures and health or safety improvements. CAAs deeply appreciate the Subcommittee's long record of support for Weatherization Assistance Program

and the trust that has been placed in our network to deliver more than \$3.5 billion worth of energy upgrades to America's most vulnerable energy consumers under the Infrastructure Investment and Jobs Act (IIJA).

The expanded program funded by IIJA will begin in the fall of 2022 after DOE approves the plans that states must submit by October 1. The initial months after full funding becomes available will be devoted primarily to recruiting contractors and employees who will be trained in the specialized skills the program requires of its workforce. The tight labor market in the construction field means this period will be especially challenging. CAAs and their non-profit partners look forward to recruiting residents of assisted communities into these "green jobs." We trust Congress and DOE understand that this part of the workforce will take longer train, and, therefore, cost more to become fully skilled.

The FY2022 appropriated programs in 17 states which started April 1 are proceeding, and plans for the other states' programs, which begin July 1, are on track for approval. DOE has set a shining example of timely issuance of the information grantees need to complete applications and of release of appropriated funds.

Also, the recently announced addition of categorical eligibility for HUD-assisted properties, which this Subcommittee urged DOE to achieve, is a major improvement that will speed CAAs outreach work and result in many multi-family buildings being weatherized. Thank you for your persistent leadership that achieved this result.

I want to address the question that is sure to emerge in times of budget constraints: *Why would we need a regular program in FY2023 through FY2027 when the IIJA program is funded and running?*

In short, the two programs are so different that both are required to be able to serve the housing stock in America's most disadvantaged communities appropriately. The "regular" or base program can do work that cannot be done with IIJA funds. It is an essential complement. One example of the reason both are needed is the as-yet-undefined statutory requirement to "Buy American." CAAs vastly prefer to Buy American at all times, and we strongly support the policy. However, WAP buys many mid-range household appliances, especially efficient refrigerators. While GE and Whirlpool (under multiple brand names) manufacture some appropriate models in the US, in many markets, agencies often cannot obtain American-made appliances in a timely manner. Imports cannot be purchased with IIJA funds, so homes in markets with only imports will be weatherized with annual appropriations funds. Also, in some rural markets with few willing contractors, it may be necessary to use annual appropriations funds to weatherize eligible multi-family buildings.

Appropriating the Weatherization Readiness Fund at \$90 million would allow our agencies to repair not only the homes that will be deferred during inspections in the FY2023 program year, but also to repair the tens of thousands of dwellings on their "deferral" lists awaiting repairs as a result of previous years' inspections. In the Congressional Budget document, DOE provided research showing that the cost to repair the number of anticipated deferred homes in the PY2023 program alone is \$43.8 million. The President's request is less than 75 percent of the funds

needed, and neither figure allows subgrantees to address previously deferred homes. Our members feel strongly that, if the Committee must make tradeoffs when considering the requested increases, it is the Readiness Fund that is the highest priority.

Currently, DOE prohibits using annual program funds in combination with the IIJA funds. This DOE policy must be changed. Under current DOE policy, any home that is repaired using Weatherization Readiness Funds cannot be weatherized with IIJA funds. This prohibition will create impossible real-world stumbling blocks to getting the greatly expanded pool of eligible homes retrofitted. Further, it means hundreds of thousands of homes of the most disadvantaged Americans, who are also the people who live in substandard housing, cannot be served. This reality is contrary to the government's commitment to focusing on those families with the greatest disadvantages. The Committee can correct this issue by directing DOE to allow combination of annual and IIJA funds.

We cannot recommend the Subcommittee move forward with the President's funding request for the "LIHEAP Advantage" initiative. It is a costly project that would seemingly "test" what is actually long-standing practice. LIHEAP and Weatherization are inseparably intertwined. Most WAP participants today are LIHEAP recipients referred to the program. More than \$400 million a year is transferred by states to the local WAP programs, and, in most states, LIHEAP underwrites measures that DOE cannot fund. Our members "braid" multiple funding sources including DOE's WAP, LIHEAP, some USDA funding and many utility efficiency program funds to address a single home. With the newly established eligibility for HUD assisted buildings, we expect to see HUD programs added into these "braids."

Studies and subsequent reports on the varieties of long-standing, state-wide leveraged programs and their outcomes were last completed in 2014 by Oak Ridge National Laboratory as part of the national program evaluation of various building types and of non-energy benefits. New research could be useful as part of the planned evaluation of the IIJA program. Studies of a pilot of these already-widespread practices would not add to the whole-program review. Notably, innovations and pilot efforts are already part of the program. DOE is expected to select winners of the first two rounds of Innovation and Enhancement competitive grants shortly. These are authorized annually. Duplication is unnecessary.

Moreover, the LIHEAP Advantage initiative proposes to use State Energy Program authority so that the proposed projects can provide “deep retrofits” not allowable with WAP funds (except for Innovation Grant funds). It acknowledges that there is insufficient authority under WAP to deliver these services. This demonstration would be a tangential, ineffective way to address the need for a higher-impact program. On behalf of our member agencies, NCAF proposed legislative changes which have been incorporated in The Weatherization Assistance Program Improvements Act, S 3769, introduced by Sens. Reed and Collins, and legislation pending introduction by Rep. Tonko in the House. We have also proposed regulatory changes DOE can make to allow higher-impact investments and cut red tape. Our hope is that these changes can be made in the coming six months, before the IIJA program launches. This Subcommittee’s oversight of the program and your policy guidance have been highly supportive of positive changes. Thank you in advance for your continuing leadership and support.

**TESTIMONY OF DAVID TERRY, EXECUTIVE DIRECTOR, NASEO, BEFORE THE
U.S. HOUSE ENERGY AND WATER DEVELOPMENT APPROPRIATIONS
SUBCOMMITTEE IN SUPPORT OF FY'23 U.S. DOE FUNDING – May 27, 2022**

Chair Kaptur, Ranking Member Simpson, and members of the Subcommittee, I am David Terry, Executive Director of the National Association of State Energy Officials (NASEO) testifying on behalf of our 56 governor-designated state and territory members. NASEO respectfully requests funding for the following U.S. Department of Energy (DOE) programs: **\$90 million for the U.S. State Energy Program (SEP); \$375 million for the Weatherization Assistance Program** (with robust funding for the innovation and resilience funds); \$392 million for the Building Technologies Office, with \$20 million for building energy codes, and \$50 million for grid-interactive efficient buildings; \$602 million for the Vehicle Technologies Office; a robust increase for SETO; \$202 million for CESER, with robust support for ISER and program direction; A robust increase for the Office of Electricity including \$81 million for energy storage and \$50 million for regional electricity market development; \$478 for carbon management within FECM; \$56 million for FEMP; and \$90 million for the Grid Deployment Office. The DOE \$4 billion request for EERE is justified given the extraordinary energy affordability, climate, and reliability crises the nation is facing. **The \$90 million SEP request is consistent with the “Dear Colleague” letter, signed by 103 Members, you received on 4/29/22, led by Mr. Tonko and Mr. McKinley.** The SEP statute provides states with flexibility to advance energy security, resilience, renewables, efficiency, EVs, grid planning and more in ways that link with state policy to achieve greater national energy impact. States also work collaboratively using SEP formula funds to accelerate results: REVWest EV charging initiative (e.g., AZ, ID, NV, UT, WY); Microgrid Working Group (e.g., CT, KY, ID, IL, NJ, PA, TN, WA); Southeast EV initiative (e.g., FL, KY, TN, AL); the Western Petroleum Response Collaborative (e.g., AK,

WA, CA, NV, ID, AZ) which responds to disruptions caused by extreme weather; coordination on low-carbon hydrogen (e.g., ID, AZ, CO); and building-grid electric management (e.g., CT, ID, FL, ID, IL, NJ, TN, PA). Past Administrations have “sliced off” a portion of the SEP *formula* funds provided by Congress for DOE-directed competitive awards on DOE priority topics. NASEO strongly opposes the use of this approach which limits states collaborative work on their priority activities. We urge Congress to explicitly provide the requested \$90 million *as formula funding to states with no more than 5% of the appropriated amount for use by DOE in providing technical assistance and support*. The SEP *formula* funds allow states to leverage DOE’s research activities and work with the private sector to improve electricity resilience, accelerate clean energy development, catalyze investments in carbon capture infrastructure, advance low-carbon hydrogen markets, support manufacturing energy efficiency, lower home energy costs through energy efficiency, and accelerate energy technology innovation through state-private sector partnerships. Two Oak Ridge National Laboratory (ORNL) studies found that each \$1 of SEP *formula* funds leverages \$10.71 of state and private funds and realizes \$7.22 in energy cost savings for citizens and businesses. With SEP funds the State Energy Offices lead or co-lead energy emergency planning and response across electricity, natural gas, and petroleum products in coordination with DOE’s CESER—which provides exceptional leadership and technical expertise to the states and energy industry. Finally, SEP is the key connection between billions of dollars spent by DOE on R&D *and* the priorities of states. State energy policy guides energy markets and the DOE-state relationship must continue to be enhanced to achieve greater impact. A greater reliance by DOE on the states to ensure federal R&D meets real world conditions would maximize the impact of R&D funding and leverage the deployment capability of states. Below are a few examples of the states’ utilization of SEP funds.

Ohio—Reduce School Energy Lighting Costs by 70%. The Ohio Energy Office provided \$215,000 in SEP funds to Sidney City Schools to replace existing, end-of-life fluorescent lighting systems with efficient LEDs at the district’s high school, middle school, and administrative offices. All project materials were provided by a local company. Sidney City Schools is expected to reduce its lighting energy costs by 70 percent.

Idaho—Coordinate Energy Emergency Preparedness. The Idaho Energy Office uses SEP funds to coordinate energy planning and policy, energy emergency preparedness, and rural community energy efficiency. The office also administers the Idaho State Energy Alliance for development of a sound energy portfolio aimed at affordable and reliable energy development.

Arizona—Supports Emergency Power for Key Facility. The Arizona Energy Office provided the City of Douglas with SEP funds for an uninterruptible power supply for a city-owned facility leased to one of the city's largest employers (350 jobs) which would have otherwise closed.

California—Development of Appliance Standards. California uses SEP funds for appliance efficiency standards. In 2020 California’s general services lamps standard became national, and in 2021 they established standards for desktop/notebook computers, gaming systems, and pool pumps. Examples of previous standard successes: portable air conditioners saving 369 gigawatt-hours annually, and sprinklers saving 150 billion gallons of water annually.

Connecticut—Public Buildings Energy Efficiency. Connecticut utilizes SEP funds to advance energy infrastructure and strategic activities, such as energy software for 3,941 state-owned/leased buildings—saving \$12 million. SEP funds are also used for community energy investments such as a farm heat recovery systems which decreased diesel use by 1,400 gallons.

Illinois—Leverage \$16 Million with 79% of Funds Going to EJ Communities. The Illinois Energy Office used SEP funds to support upgrades at four publicly-owned wastewater treatment

plants, leveraging \$16,018,574 in funds from municipalities and saving 2,431,955 kWh annually.

Of the funds awarded, 79% was granted to facilities serving EJ communities.

Florida—Resilience at 86 Schools/Shelters. The Florida Energy Office installed PV arrays and battery back-up at 86 schools that also serve as emergency shelters through the SunSmart Schools Emergency Shelter E-Shelter Program. These systems provide power to critical loads during emergencies and offset electricity costs, and they have weathered numerous storms and hurricanes with the majority of the PV systems surviving severe weather events—proving the quality and resiliency of these systems. Additional utility funds added schools in 46 of Florida's 67 counties, and each system is being inspected and upgraded over time to enhance performance.

Nevada—EV Charging Installation Along Nevada Highways. The Nevada Energy Office uses SEP funds to support transportation electrification through the Nevada Electric Highway program and participation in the Regional Electric Vehicle Plan for the West—an 8 state partnership. The program leveraged \$3.7 million in VW funds, \$500,000 in state funds, and \$2.6 million from local utilities to construct over 30 EV charging sites across the state.

New Jersey—Upgrades Efficiency at the Highland Lakes Fire Department. The New Jersey Energy Office provided SEP Funds for lighting and HVAC retrofits for the Highland Lakes Fire Department. The project converted inefficient fluorescent and incandescent lights to LEDs. In addition, the firehouse installed three air conditioning condenser units, programmable thermostats, faucet aerators, and pipe insulation to save on electric and oil heating costs.

Pennsylvania—Assist Local Communities in Developing Climate Plans. Pennsylvania's Energy Office partnered with ICLEI to train 150 local government staff, college students, and others on developing GHG inventories and plans to achieve climate goals in 270 municipalities.

Tennessee—Leading the Charge on Transportation Electrification. The Tennessee Office of Energy Programs (OEP) used a portion of their SEP funds—in partnership with the Tennessee Valley Authority—to support EV fast-charging and add 40 priority charging locations in order to double the state’s fast-charging network. OEP also leveraged SEP funds to partner with TN-DOT on the plan for IIJA-funded EV fast-charging. The Drive Electric Tennessee Roadmap aims to increase EV adoption to 200,000 EVs by 2028, up from 18,494 in 2022. This work has been foundational to the state’s leadership in EV infrastructure and EV-related manufacturing.

Texas—Energy Technology Innovation for Economic Impact. The Texas State Energy Conservation Office utilized their SEP funds for cleantech incubators at the University of Texas at Austin and Texas A&M Engineering Experiment Station. The investments of less than \$459,000 in SEP funds between September 2020 and December 2021 helped raise \$37.6 million for innovative energy technology, with \$24 million in direct, indirect and induced economic impact. This Texas program is a model for other states.

Washington—Energy Emergency Response. The Washington State Energy Office utilized their SEP funds to address critical energy emergency preparedness and response. In 2021, heavy rain led to flooding and landslides, damaging infrastructure in Washington and British Columbia resulting in a regional fuel emergency. The State Energy Office led efforts to ensure critical fuel deliveries. Damage in British Columbia’s Trans Mountain Pipeline which Washington refineries rely on for crude oil was forced to close. The State Energy Office collaborated with British Columbia and the multi-state Western Petroleum Shortage Collaborative. The positive outcome was the result of great planning and coordination at the state, federal, international levels.

Contact: David Terry, NASEO Executive Director (dterry@naseo.org) (1300 North 17th Street, Suite 1275, Arlington, VA 22209) and Jeff Genzer, NASEO Counsel (jcg@dwgp.com).

Written Public Testimony for the Record

Ellen Kuo, Associate Director, Legislative Affairs, FASEB in

Support of the Department of Energy Office of Science for FY 2023

Before the Subcommittee on Energy and Water Development and Related Agencies

Committee on Appropriations

U.S. House of Representatives

May 11, 2022

As the largest coalition of biomedical researchers in the United States, representing 28 member societies and 115,000 individual scientists, the Federation of American Societies for Experimental Biology (FASEB) recommends at least \$8.8 billion for the Department of Energy Office of Science for FY 2023.

Federal investments in fundamental research have led to remarkable progress in the biological and biomedical sciences. Basic research was the groundwork for the speed – months instead of years – that led to the development of COVID-19 vaccines and also supports pre-clinical research involving the use of animal studies to achieve medical progress.

Despite Congress' bipartisan support for investing in science, federal funding for research has not kept pace, posing a threat to our nation's competitiveness. We face a real threat of losing our edge in industries such as biotechnology if we do not prioritize increasing investments in science, research infrastructure such as core facilities, and building a diverse workforce¹ The U.S. spends less on research and development (R&D)

¹ <https://nces.nsf.gov/pubs/nsb20201/executive-summary>

than many countries. If the U.S. is to be prepared to respond to future threats, our scientific leadership must progress. According to Science Is Us, there is the added benefit of jobs. STEM supports 69 percent of U.S. gross domestic product, touches two out of three workers, and generates \$2.3 trillion in tax revenue.²

The DOE Office of Science (SC)'s mission is the delivery of scientific discoveries and major scientific tools to transform our understanding of nature and advance the energy, economic and national security of the U.S. It is also the nation's largest supporter of physical sciences and supports over 28,000 Ph.Ds., graduate students, engineers and undergraduates and staff at over 300 universities.³ Transformative innovations and technologies can be traced to its work, including solar cells, superconductors, and nanotechnology.^{4, 5}

Agencies like NIH, NSF, and DOE SC work in concert to advance research in key areas including artificial intelligence and genomics.^{6,7} SC supports the network of DOE national laboratories and builds and operates the most sophisticated, world-class scientific user facilities used by over 36,000 researchers from universities, industry, and other federal agencies⁸. National labs were integral to the creation of the National Virtual Biotechnology Laboratory and the COVID-19 High Performance Computing Consortium that brought together the best minds to address Covid.

² STEM and the American Workforce. You've heard it before: STEM jobs — by Science is Us | Medium

³ Dr. Harriet Kung, Deputy Director for Science Programs in the Office of Science (SC) at the U.S. Department of Energy (DOE) 2021 presentation

⁴ A Remarkable Return on Investment in Fundamental Research: 40 Years of Basic Energy Sciences at the Department of Energy, 2018

⁵ DOE Discovery Impacts in Life Sciences

⁶ Artificial Intelligence and Technology Office, U.S. Department of Energy

⁷ Genomic Science Program, U.S. Department of Energy Office of Science

⁸ FY 2022 Congressional Budget Justifications page 8

For the U.S. to remain at the forefront of science and technology, Congress must consistently sustain and upgrade major scientific facilities that support core research in areas such as bioscience, scientific computing, materials and chemical science, climate science, fusion energy, high energy and nuclear physics to keep up with global competitiveness.⁹ A FY 2023 budget of \$8.8 billion would enable continued critical facilities upgrades and support pathbreaking research in emerging areas such as quantum science while also supporting climate research and a skilled, diverse, and inclusive workforce of researchers, scientists, and professionals.

⁹ BESAC Report on Facility Upgrades, U.S. Department of Energy Office of Science, 9 June 2016

TESTIMONY OF
GENEVIEVE CULLEN, PRESIDENT OF THE
ELECTRIC DRIVE TRANSPORTATION ASSOCIATION,
SUBMITTED TO THE
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT,
AND RELATED AGENCIES, OF THE
HOUSE APPROPRIATIONS COMMITTEE

MAY 27, 2022

The Electric Drive Transportation Association (EDTA) is the cross-industry trade association promoting the advancement of electric drive technology and electrified transportation. We are writing to support robust FY2023 funding for the Department of Energy's (DOE) electric transportation programs, including the Vehicle Technologies Program, Hydrogen and Fuel Cell Technologies Office, ARPA-E, Department of Energy Loan Programs, Clean Cities, and programs established by the Bipartisan Infrastructure Law (BIL) to increase electric vehicle (EV) deployment across the country.

EDTA's members represent the entire value chain of electric drive, including vehicle manufacturers, battery and component manufacturers, utilities and energy companies, smart grid and charging infrastructure developers. Collectively, we are committed to realizing the economic, national security and environmental benefits of displacing oil with electricity in hybrid, plug-in hybrid, battery, and fuel cell electric vehicles. DOE's research, development and deployment programs speed the innovation needed to transition to e-mobility.

The importance of electrifying transportation has been widely documented. Emissions from the transportation sector threaten public health and the environment. A recent report published in *Lancet Planetary Health* documents that air pollution is responsible for nearly seven million premature deaths each year. Electric transportation is essential to reducing these harmful emissions. The Union of Concerned Scientists studied the total emissions reductions of electric

drive in every region of the country. The study found that no matter where in the U.S. an EV is charged and operated, it has fewer total well-to-wheels emissions than the average gasoline-powered vehicle sold today.

Electrification is also a national security imperative. According to the U.S. Energy Information Administration, the transportation sector accounted for approximately 26 percent of the nation's energy use in 2020; 90 percent of that energy came from petroleum fuels. This reliance is a chronic threat to U.S. energy and economic security. As we are being reminded today, oil reliance also keeps consumers and businesses vulnerable to volatile markets and spiking prices. The price of electricity is more stable and affordable than gasoline, with gas costing nearly three times as much per gallon compared to the eGallon price equivalent for electricity.

In her testimony to the Subcommittee on April 28, 2022, Secretary Granholm detailed the role of DOE's portfolio of electrification programs in realizing the environmental, economic and competitiveness benefits of e-mobility. Specifically, DOE's Vehicle Technologies Program is a critical element of the national effort to decarbonize transportation, leveraging private sector investments to promote innovation in advanced vehicles, infrastructure and manufacturing chains. The program advances research in batteries and power electronics, electric drive motors, components and charging technologies. Increased range, reduced costs, and improved performance are battery advances supported by the Battery and Electric Drive Technology subprogram. Critical supporting infrastructure, including charging systems and codes and standards for communication with the grid, are being developed in the Vehicle Systems Simulation & Testing program.

The Vehicle Technologies Program is also advancing electric alternatives in commercial vehicles. The truck and transit segment is projected to grow rapidly in the next two decades. Research, demonstration, and deployment of electric drive technologies for combination tractors, heavy-duty pickup trucks and vans and vocational vehicle technologies' systems and components will speed technology breakthroughs and contribute to cost reductions while providing public health benefits and energy cost savings throughout the economy.

The SuperTruck Program is an important part of this effort. We support increased program investment in Class 7 and Class 8 vehicles, which are a significant part of the commercial fleet. An expanded program should continue to engage partners from across the manufacturing chain – chassis original equipment manufacturers, intermediate and final stage manufacturers, including hybrid system suppliers, and infrastructure providers – to improve performance in vocational vehicles.

Through the Hydrogen and Fuel Cell Technologies Office, DOE is working with industry to accelerate the availability of fuel cell electric vehicles. There are over 12,000 of these zero emission electric vehicles on American roads today. DOE's Hydrogen Shot seeks to reduce the cost of clean hydrogen by 80% to \$1 per 1 kilogram in one decade, improving the affordability of the production, storage, and distribution of clean hydrogen to help achieve the goals of H2@Scale.

Improvement of battery technology remains an industry priority to help achieve cost parity of EVs with ICE vehicles. Battery prices fell approximately 89% between 2010 and 2020, with a 13% drop in 2020 alone, according to BNEF. Prices are expected to continue to decrease – despite challenges associated with material sourcing – with the development of novel battery chemistries, more efficient manufacturing, and simplified pack designs.

To address these material sourcing challenges, we support the Department's efforts to strengthen the domestic supply chain for critical elements in EV batteries, including lithium, nickel, and cobalt. The Department's recently announced \$3 billion investment, directed under the BIL, will enhance domestic capacity to meet demand for these critical elements.

ARPA-E's role is essential in overcoming high-risk technological barriers that the private sector may not attempt in the early stages of research and development. Past programs, such as Robust Affordable Next Generation Energy Storage Systems (RANGE) and Batteries for Electrical Energy Storage in Transportation (BEEST), helped improve performance and reduce costs of batteries. New programs would expedite innovation in critical materials and develop new processes to recycle, reuse, and reclaim battery materials.

We ask that the Subcommittee continue its record of support for these programs, particularly in vehicle and infrastructure deployment activities and in early market development, education, validation and enabling activities. We support increased collaboration among universities, the 17 National Laboratories, and industry to address these challenges and develop clean energy solutions. Continued funding of the Department's loan programs, including Title 17 and Advanced Technology Vehicles Manufacturing (ATVM), will build domestic capacity and support good-paying manufacturing jobs.

EDTA also strongly supports the Clean Cities program. Clean Cities works with nearly 75 local and regional coalitions to expand deployment of electric drive and alternative fuel cars and trucks and recharging/fueling infrastructure, especially in underserved and BIPOC communities. These voluntary and locally-driven efforts have a demonstrated record of success, including the cumulative displacement of more than 12 billion gasoline gallon equivalents (GGEs) of petroleum with alternative fuels since the program began in 1993.

To advance the Administration's effort to install 500,000 charging stations across the country through the National EV Infrastructure (NEVI) Program, we support directing resources to help municipalities participate. These resources could be used to reduce the time and costs for permitting, inspecting, and interconnecting eligible infrastructure through standardized requirements, online application systems, recognition programs, and other technical assistance.

We appreciate the Committee's long-standing support for the important research, development and deployment programs at the Department of Energy. At this inflection point for the climate change action and for the electric drive industry, we respectfully request that appropriations for FY2023 reflect the magnitude of both our national energy challenge and our electric drive opportunity.

Thank you for your consideration.

Public Witness Testimony of H. Davis Whitehead, Jr.

President, Coalition of Oak Ridge Retired Employees, Inc.

Oak Ridge, Tennessee

Before the

U.S. House Committee on Appropriations

Subcommittee on Energy and Water Development and Related Agencies

May 2022

It is an honor to have this opportunity to submit written testimony on an issue that should be a priority in the Fiscal Year 2023 budget request for the Department of Energy (DOE), namely a needed pension increase for contractor retirees from DOE facilities in Oak Ridge, Tennessee. The FY 2023 Congressional Budget Justification provided by DOE in Volume 2, Crosscutting Activities, proposes \$841,668,000 for contractor pension plan contributions for the entire DOE Complex, a decrease of 34% from the projected FY 2022 contributions at a time when inflation and its impact on retirees are spiraling out of control.

The Coalition of Oak Ridge Retired Employees, Inc. (CORRE) represents about 15,000 pensioned retirees and beneficiaries of the managing contractors of the DOE facilities in Oak Ridge. Over 10,000 additional individuals are entitled to future benefits either as current employees or former employees with vested rights. Workers who retired as long ago as 1971 rely on this source of income and, if needed, to provide for their surviving spouses.

This is an Executive Summary of key points which the material that follows supports:

1. DOE's proposed cut of 34% (from the 2022 level) in the 2023 budget for retirement plan contributions **is grossly inappropriate.**
2. **BUREAU OF LABOR STATISTICS CPI Inflation Calculator** shows \$1.78 was needed in April of 2022 to replace \$1.00 in 1998.
3. **DOE's policies** regarding contractor employee benefits are not consistent with statements honoring and praising these employees' service.
4. **DOE Contractor Oak Ridge pension plans** have generally been underfunded since 2008 in spite of the Pension Protection Act existence.

A basic need of retirees and surviving spouses is maintenance of their pensions at a level that compensates (at least partially) for inflationary loss in purchasing power during retirement. The last general cost-of-living adjustment for Oak Ridge DOE contractor retirees occurred on April 1, 2001, but increases were given only to those who retired prior to April 1998. According to the U.S. Bureau of Labor Statistics CPI Inflation Calculator, \$1 in April 1998 now needs to be \$1.78 as of April 2022 to have the same purchasing power, and inflation is rapidly escalating. In contrast, cost-of-living increases during this same period have effectively been 70.1% for Social Security, 69.9% for the Federal Civil Service Retirement System, and 55.9% for the Federal Employees Retirement System, and will again be adjusted upward at the end of this year.

The roles and responsibilities of DOE and its prime contractors regarding current and retired employee benefits are complex. Comparison of retirement benefits between DOE employees and its contractor employees has merit. DOE is the largest civilian contracting workforce agency in the Federal Government. DOE's staffing level is a tiny fraction of what

would otherwise be necessary to conduct its mission if it were like most other agencies whose employees perform the work as Federal Government employees.

DOE's policies regarding contractor employee benefits are not entirely consistent with statements that honor and praise these employees for their service to the nation. According to a 2011 DOE procurement attorney presentation and statements in DOE's annual agency financial report, DOE is not the employer of the contractor work force or the sponsor or the fiduciary of their benefit plans. DOE says it is only the contracting agency with responsibility to manage its contracts prudently and consistently with applicable law. DOE contractor pension plans are not governmental plans, and DOE does not insure [sic] the benefits provided. The contractors are required to become plan sponsors and are reimbursed for plan expenses under the conditions of their contracts. Otherwise, the plans are managed by the employers much as they would be in private sector operations. Premiums are paid to the Pension Benefit Guaranty Corporation. The DOE contracting officer approves reimbursement of costs which may be limited to minimum required contributions.

The contractor pension plans in Oak Ridge have generally been underfunded below target since stock investments crashed in 2008. Some of the plans have even taken advantage of legislation such as the American Rescue Plan Act (ARPA) that provided funding relief for private sector pension plans to reset and amortize shortfalls over an even longer period of time. It is ironic that the ARPA which provided billions of dollars in economic impact payments was used to perpetuate underfunding of pension plan liabilities and preclude consideration of potential plan changes that could increase benefits to retirees.

Early Department of Energy contractors provided pension increases on an ad hoc basis to assure the financial welfare of their retirees. This practice was discontinued as the major contractors were replaced by limited liability corporations -- new stand-alone business entities formed in response to individual procurement acquisitions. The last group of retirees benefitting from a general ad hoc adjustment anywhere in the DOE Complex was employees who retired from Sandia National Laboratories before December 2000. Generally, pension increases were funded by a plan surplus at the time of amendment; however, an increase at the Savannah River Site around the same time was funded by an increased plan contribution. There has since been limited discussion and no pension adjustments implemented that would aid the general retired de facto DOE workforce. It is worth noting the General Assembly of the State of Tennessee, supported by many local officials, passed a resolution in 2008 that urged Congress to adjust the retirement benefits of former United States Department of Energy Oak Ridge prime contractor employees and immediately grant pension adjustments to all retirees to restore approximately 75 percent of inflationary losses in purchasing power relative to original pension value.

There seems to be no acknowledgement by either the Department of Energy or the contractors that a contractor retiree pension increase is something that should even be reviewed for merit. A 2016 letter sent to CORRE's President from the President and Chief Executive Officer of a major contractor stated that any increased pension benefit, even for certain retirees and spouses, does not support their overall objective to effectively manage cost, while providing a marketable benefit plans package to all plan participants. The contractor would not ask plan actuaries to update a cost estimate, citing an interest in controlling plan

administrative expenses. CORRE now concludes that any progress on this issue will likely require targeted action by the Department of Energy and Congress.

A letter report prepared in 2018 by DOE for Congressman Joe Wilson of South Carolina exposed the differences in contractor pension plans across the DOE Complex but attempted to rationalize them based on site-level differences. This does not answer the basic question about why differences exist among workers who basically support activities that evolved from a common national security mission. The report also stated that there is no DOE Order or policy directive that prevents DOE contractor ad hoc pension increases. However, it is difficult to envision funding scenarios that do not compete with funding of ongoing operations and mission unless supported and funded by a budgetary oversight authority.

The economic impact of maintaining the value of benefits for retired DOE contractor employees is not trivial. According to a "U.S. Department of Energy FY2020 Economic Impact in Tennessee" report, pension disbursements had a direct effect of \$294,488,293 and indirect and multiplier effects of another \$110,492,008 and 2,739 jobs created. Any adjustment to restore loss of purchasing power by the retirees would thus have a positive effect on the regional economy. The needed adjustment could be provided by an annual cost-of-living increase of a fixed percentage going forward or ad hoc increases that restore all or part of original pension value. CORRE itself does not have the resources or access to the data to perform an estimate of the required funding.

We appreciate your attention to this important issue and hope you agree with the validity of the points and will consider responsive action. We welcome the opportunity to provide additional information to the Committee or its staff.

**Written Testimony of James D. Ogsbury, Executive Director
Western Governors' Association**

**Submitted to the United States House of Representatives
Committee on Appropriations
Subcommittee on Energy and Water Development, and Related Agencies
April 18, 2022**

Fiscal Year 2023 Appropriations

Chairwoman Kaptur, Ranking Member Simpson, and Members of the Subcommittee, the Western Governors' Association (WGA) appreciates the opportunity to provide testimony on the appropriations and activities of the federal agencies under the Subcommittee's jurisdiction, including the Department of Energy (DOE), Federal Energy Regulatory Commission (FERC), Bureau of Reclamation (BOR), and U.S. Army Corps of Engineers (Corps). WGA is an independent organization representing the Governors of the 22 westernmost states and territories. It is an instrument of the Governors for bipartisan policy development, information sharing and collective action on issues of critical importance to the western United States.

The agencies within the Subcommittee's jurisdiction wield significant influence over the American West and the development of energy and water resources in the region. Western Governors recognize the importance of a close and productive working relationship between states and the federal government and understand that more effective intergovernmental cooperation depends on federal recognition of states as co-sovereigns and partners. The promotion of a greater partnership between states and the federal government is central to the mission of WGA and is reflected in WGA Policy Resolution 2021-01, Strengthening the State-Federal Relationship. WGA Policy Resolutions 2022-01, Energy in the West; 2021-10, Water Resource Management in the West; and 2021-08, Water Quality in the West, communicate Governors' collective perspectives on energy and water policy priorities and infrastructure needs.

State Authority Over Water Resources: States possess the primary legal authority for the allocation, management, protection and development of water resources within their borders. Congress and the federal judiciary have consistently and expressly recognized, and deferred to, this state authority. Federal policy must respect and preserve state authority to manage water, as well as recognize state law and the financial, environmental and social values of water resources to citizens of the western states.

States have exclusive authority over groundwater within their borders and are primarily responsible for protecting, managing, and otherwise controlling the resource. WGA encourages the Subcommittee to prohibit the use of appropriated funds for any activity that would, or has the potential to, usurp state authority over groundwater resources. The federal government has long recognized the right to use water as determined under the laws of the various states. Federal agencies must work with the states to address any groundwater-related needs and concerns, and Western Governors value federal agencies' operating within this established legal framework.

Water Data: Western states need reliable information on the status, trends, and projections of water availability. Western Governors support funding for improved predictive and adaptive capabilities for extreme weather variability, including sub-seasonal and seasonal precipitation and water supply forecasting. Forecasting improvements will support better water management decision making. Data collection, monitoring, and communication is most effective when coordinated across federal agencies and with state agencies.

Water Infrastructure: The need for new water projects, as well as improvements to aging water, wastewater and hydropower facilities, is becoming increasingly urgent. Infrastructure investments are essential to our nation's continued economic prosperity, electric generation capacity, and environmental protection. The Subcommittee should continue to fully

use receipts accruing to the Reclamation Fund for their intended purpose: the conservation, development, and use of resources to meet western water-related needs. Western Governors support the construction of congressionally authorized BOR rural water projects and facilities that are part of congressionally-authorized Indian water rights settlements.

Western Governors emphasize the important functions of BOR's WaterSMART Program and the Corps' Planning Assistance to the States Program, which support investments in modern water delivery infrastructure and comprehensive water resources planning, respectively. Western Governors encourage the Subcommittee to fully allocate western water infrastructure funds authorized by the Infrastructure Investment and Jobs Act (IIJA, Pub. L. 117-58) to promote projects addressing water storage and conveyance, drought resiliency, and water recycling and reuse. The Subcommittee can promote greater investment in water infrastructure by using such tools as loan guarantees, revolving funds, infrastructure banks, water trust funds, and the Water Infrastructure Finance Innovation Act (WIFIA) program. Western Governors urge that capital budgeting and asset management principles be used to determine funding priorities based on long-term sustainability and not annual incremental spending choices.

Aquatic Invasive Species: The spread of invasive quagga and zebra mussels continues to be a major threat to western water resources. The containment of these invaders in infested waters in the West depends upon the collaboration and cooperation of federal, state and local agencies. Many state-led containment programs benefit from federal cooperation and funding. Western Governors request that the Subcommittee provide BOR with the necessary funding to collaborate with western states to contain the spread of aquatic invasive species.

Waste Isolation Pilot Project: Continued funding for DOE's Waste Isolation Pilot Plant (WIPP) Transportation Safety Program is essential to the cleanup and disposal of transuranic

(TRU) waste from U.S. nuclear weapons complex facilities in western states, including Idaho National Laboratory, Los Alamos National Laboratory in New Mexico, Lawrence Livermore National Laboratory in California, and the Hanford Site in Washington. DOE must continue to provide sufficient and timely in-kind, financial, technical and other appropriate assistance to states and tribes through whose jurisdiction TRU waste will be transported. The safe and uneventful transportation of TRU waste is a priority of Western Governors, and WGA encourages the Subcommittee to provide adequate funding to ensure that the important work of the WIPP Transportation Safety Program continues.

Energy: Energy generation and delivery systems are undergoing rapid, significant change across the West. The IIJA included many provisions that will help western states and communities invest in innovative energy technologies, promote grid infrastructure resilience, and respond to a growing cyber threat landscape. Western Governors encourage the Subcommittee to support new and existing programs focused on investments in grid infrastructure hardening and weatherization technologies, vegetation management in utility corridors, the undergrounding of electrical equipment, and enhanced cybersecurity defense systems for electricity providers.

Western Governors support a variety of federal programs that promote energy systems planning, energy efficiency upgrades, and the adoption of innovative energy technologies in rural areas. Western Governors encourage the Subcommittee to provide adequate funding for the State Energy Program (SEP), Rural Energy for America Program (REAP), Weatherization Assistance Program (WAP), and Low-Income Home Energy Assistance Program (LIHEAP). The SEP is key for states to effectively implement IIJA provisions focused on planning for transmission and distribution infrastructure and transportation electrification infrastructure. In addition, Western Governors encourage the Subcommittee to provide DOE and FERC with

additional support to enhance staff and resource capacity to conduct transmission infrastructure environmental review and permitting activities.

Western Governors are committed to making make the West an international hub for new energy technology and request that the Subcommittee fund research, development, demonstration, and deployment of advanced energy and energy storage technologies, including battery, hydrogen, pumped hydropower, and compressed air. DOE's National Laboratories serve a crucial role in energy research and development across the West. Western Governors also note the importance of emerging tools and technologies that address barriers to mineral supply chain reliability, including technologies that help recycle or reuse existing critical mineral resources, and encourage the Subcommittee to support DOE programs focused on critical mineral and battery manufacturing, processing, and recycling.

Congress should refrain from advancing the interim storage of commercial nuclear waste through the appropriations process without requiring the consent of affected Governors.

Western Governors emphasize the importance of permitting and completing infrastructure projects on efficient timelines. Leveraging existing rights-of-way or collocating projects along linear infrastructure assets can help support permitting and environmental review efficiencies. Western Governors encourage the Subcommittee to support strategies that improve coordinated permitting and environmental review practices across ownership boundaries. Western Governors and federal agencies deal with a complex web of interrelated energy and water resource issues. It is an enormous challenge to judiciously balance competing needs and Western Governors appreciate the difficulty of the decisions this Subcommittee must make. The foregoing recommendations are offered in a spirit of cooperation and respect, and WGA is prepared to assist you as the Subcommittee discharges its critical responsibilities.

Testimony of Jeannette Wierzbicki, Executive Director, Ohio Mid-Eastern Governments
Association on behalf of the Development District Association of Appalachia

Outside Witness Testimony
House Committee on Appropriations
Subcommittee on Energy and Water Development and Related Agencies

May 26, 2022

On behalf of the Development District Association of Appalachia (DDAA), I'm pleased to submit the following outside witness testimony in support of an FY23 appropriation of \$18 million to Appalachian Regional Commission (ARC) Local Development District (LDD) Administrative (Admin) funding.

My name is Jeannette Wierzbicki and I am the Executive Director of the Ohio Mid-Eastern Governments Association (OMEGA) based in Cambridge, Ohio, which serves a geographic region comprised of ten counties in the eastern Appalachian region of Ohio. My organization's core mission is to facilitate local and regional economic development in close partnership with ARC. The OMEGA board is comprised of mayors and county officials, as well as non-elected citizen members and private sector representatives from each of the region's counties. In a sense, OMEGA pulls its communities together to make sure ARC-funded projects are well-conceived, designed, implemented, and sustained – but we can't do that without ARC administrative funding support.

I also, for a few more months, have the distinct privilege of serving as the Board President of the Development District Association of Appalachia. DDAA offers programs across the 13 ARC states to provide critical technical assistance, training, and a forum for improving ARC processes and project reviews.

At the outset, I want to thank the Subcommittee for including a \$1.8 million increase in FY22 and directly specifying \$8 million in the FY22 appropriations legislation. This is an incredibly important first step to ensuring critical taxpayer dollars allocated through ARC are wisely spent. Robust LDD Admin funding is essential for locally-based Appalachian region economic development strategies to work. Through workforce development and job creation, conducting strategic community planning, deep analysis of regional needs and capabilities, and offering technical assistance to leverage other public and private sector funding, LDDs are the glue between and beyond these initiatives.

In Ohio, the investment of ARC area development funds in a region is a locally driven process. The LDDs assist communities with project planning, solicit pre-applications for ARC area development funds, review, score, and provide a recommendation to the LDD's Executive Board for approval. Following approval of the pre-applications by our Executive Board, we submit the pre-applications to the Governor's Office of Appalachia and following their concurrence, we work with communities on the full applications to ARC. Each year, OMEGA conducts a workshop for applicants, assists with the complete application to ARC, and assists communities with administration if warranted. We also assist communities with applications and the

administration of POWER and INSPIRE grants.

It goes without saying that ARC has been a crucial federal partner in supporting my region's growing economic strength, but let me dive deeper and share with you the critical importance of ARC Area Development funds and how OMEGA uses ARC LDD funds for community-wide infrastructure planning and collaboration, workforce development, capacity building, building entrepreneurship through an ARC funding revolving loan program, and building upon natural and community assets. Area Development funds are critical for our region to become more economically competitive and to reach parity with the rest of the nation. For example, the following projects illustrate our impact:

Coshocton West Lafayette Water Line, Coshocton County, Ohio

With completion of a waterline extension project, the City of Coshocton is able to provide an ample supply of safe quality drinking water to the Village of West Lafayette. The village's water system was being threatened by a volatile organic compound (VOC) plume approaching the village's water wells. This collaborative approach not only resolves the potential contamination issue, but also provides lower water rates for residents and businesses in West Lafayette and provides water for unincorporated areas of Coshocton County.

The City of Coshocton and the Village of West Lafayette agreed to regionalize their systems with the City of Coshocton assuming ownership of the Village's water utility assets. The project improved water quality for **948 households** and **39 businesses** in West Lafayette and provided new water service to **105 households** and **three businesses**. This project exemplifies the collaboration that is occurring throughout the OMEGA region and may be used as a successful model for other communities.

Approximately 22,100 feet of 12" water main from the Coshocton to West Lafayette were installed and 13,000 linear feet of undersized 4" waterlines were replaced with 8" waterlines in West Lafayette to address flow and pressure issues and 900 new water meters compatible with the City's billing system were also installed. OMEGA worked with the city to complete an ARC grant application for \$250,000 for this project, prepared a Community Development Block Grant Residential Public Infrastructure Grant (CDBG RPIG) application for \$750,000, and provided funding and administrative services for this project to include prevailing wage rate review and employee interviews, preparing drawdown/reimbursement requests, reviewing compliance with grant conditions, and project close-out.

Other funding was provided by:

- Ohio EPA WSRLA \$5,078,340 (principal forgiveness and loan)
- H2OHIO \$500,000
- US Army Corps of Engineers \$994,444

Wastewater Collection and Treatment System: Village of Amsterdam, Jefferson County

Construction of a public wastewater collection and treatment system for the Village of Amsterdam is now completed thanks to an initial grant of \$250,000 from the ARC and multiple other sources of state and federal grants and loans. This \$10,241,800 project was needed due to

violations from Ohio EPA for failing septic systems in the village and surrounding areas of Springfield Township in Jefferson County and Loudon Township in Carroll County, communities. The Ohio Rural Community Assistance Program (RCAP) was instrumental in securing funding for this project from the CDBG RPIG Program, the US Army Corps of Engineers, the US Department of Agriculture, the Ohio Water Development Authority and the Ohio Environmental Protection Agency.

ARC's investment will help to keep extending sewer lines and keep utility rates affordable for the residents of these communities. This is another great example of jurisdictional **collaboration** through OMEGA with Jefferson County taking the lead on this project for a small village that does not have the capacity to own, operate, and maintain a wastewater system and of collaboration with an adjacent county to provide this critically needed infrastructure. Outcomes for this project include 47,546 linear feet of eight-inch sanitary sewer line, 2,559 linear feet of 1.5-inch pressure sewer, 11 grinder pumps, two pump stations, and a 50,000 gallon per day extended aeration treatment plant. The project improves **364 households** and **25 businesses** located in the village and the two townships.

Steubenville Waterline Valve Replacement Project

In January 2018, the City of Steubenville experienced the complete depressurization of the downtown water systems due to a waterline break on a 20" line that never surfaced. All downtown businesses, schools and residents were without water for 12 days, also affecting heating systems for those using boilers. In February 2018, the Ohio Environmental Protection Agency (Ohio EPA) issued a Notice of Violation to the City. The Jefferson County Port Authority assisted the City with preparation of a grant application for funding from the ARC to start a water valve replacement program.

OMEGA assisted the City with an ARC grant application for \$250,000, which was leveraged by \$1,351,722 in Ohio EPA loans and principal forgiveness funding for the project. OMEGA also provided assistance with the administration of these funds. No major interruptions in water service in the downtown business district have occurred since this project was completed. The outcomes for Phase I of this project include 44 gate valves replaced, 14 insertion valves installed, 60 fire hydrants replaced and **18,659 city residents** and **3,930 city businesses** improved.

LDD success stories extend far beyond my region. My organization is just one of 74 LDDs serving 423 counties in the 13 state Appalachia Region served by the ARC. LDDs truly are the essential local partner in the ARC's Federal-State-Local partnership. In practice, LDDs effectively serve as extensions of the ARC at the local levels, especially insofar as they are sources of extensive knowledge and know-how on ARC programs.

With the LDD administrative funds that we receive, OMEGA also assists the communities in our region with other state and federal grant programs. In 2021, we helped communities obtain over \$7 million in other funding for community and economic development projects. Many of our communities do not have the capacity to procure or administer funding which may range from \$15,000 park improvements for a village with less than 300 people to multi-million dollar infrastructure projects.

For FY23, DDAA, which services as the collective voice of LDDs, encourages Congress to fund ARC LDD Admin Funding at an \$18 million level. This significant level of funding would enable LDD's to add additional economic development personnel and keep already well-trained and trusted staff. As ARC top line funding has increased, however, ARC LDD has remained relatively flat. Ultimately this has meant a **heavier administrative burden on the same communities that ARC is designed to support.** While more opportunities are a win for Appalachia, without qualified staff to take on this work, it has the potential to be a drag on the region's capacity to develop and implement quality projects. That's not helpful to the region, to the Congress or to the country. Further, while the landmark bipartisan Infrastructure Investment and Jobs Act (IIJA) provided a record \$1 billion for ARC, no designated LDD administrative grant support was included. An FY23 Energy & Water Appropriations funding level of \$18 million would enable overburdened LDDs to add the necessary additional staff to assist in the administration and implementation of increasingly larger and more complex ARC investments.

Many communities in the Appalachian region are served by part-time mayors who work full-time jobs and many local economic development agencies have limited staff as well. The LDDs provide the additional capacity to these communities and organizations so that the Appalachian region has access to these resources with the goal to reach economic parity with the nation and to become globally competitive.

As previously stated, DDAA is extremely grateful for this Subcommittee's incredible support of the ARC over the past few years. As Congress considers proposals to support economically distressed rural communities and invest in drivers of economic growth, ARC remains a crucial federal partner to assist in these endeavors and LDDs stand ready to serve as the backbone to successful initiatives. I encourage you to **support a funding level of \$18 million for ARC LDD Admin Funding.** Thank you for the opportunity to submit comments and opinions here today.



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**Testimony from Jimmy Hague, Senior Water Policy Advisor at The Nature Conservancy,
For the U.S. House of Representatives Subcommittee on Energy and Water Development
on the Fiscal Year 2023 Appropriations for the U.S. Army Corps of Engineers, Bureau of
Reclamation and Department of Energy**

May 27, 2022

Chairwoman Kaptur, Ranking Member Simpson and members of the Subcommittee, thank you for the opportunity to present The Nature Conservancy's (TNC's) testimony on fiscal year (FY) 2023 appropriations for the U.S. Army Corps of Engineers (Corps), Bureau of Reclamation (Reclamation) and Department of Energy (DOE).

TNC thanks the Subcommittee for its attention to the water resources needs of the country, especially including past support for natural infrastructure, which the Corps and Reclamation can use to enhance water infrastructure and improve environmental outcomes. Using natural infrastructure provides effective and cost-effective multi-benefit solutions to many water resource management problems. TNC also applauds the Subcommittee's past commitments to vital clean energy technology research, development and deployment programs. These programs are a critical pillar of efforts to reduce greenhouse gas emissions and avoid the worst effects of climate change. TNC strongly encourages the Subcommittee to continue to support natural infrastructure and clean energy programs again in FY23.

TNC is focused on supporting the programs and investments needed to ensure economic and environmental benefits are enhanced today and made sustainable for tomorrow and asks your support for the requests detailed below.

U.S. Army Corps of Engineers

Sustainable Rivers Program (SRP): SRP is an initiative to modernize the operations of the nation's reservoirs to enhance water supply, flood protection, hydropower generation and recreation, while restoring critical ecosystems and the economically valuable services they provide. The challenges related to providing water supply and flood protection are growing and will only increase due to climate change. SRP works collaboratively with local communities, water stakeholders, states and other federal agencies to update decades-old water management practices to better meet society's needs. With increased funding in FY20-FY22, the Corps has been able to significantly expand the program from 16 rivers—encompassing 66 reservoirs and 5,083 downstream river miles—to 43 rivers—encompassing more than 90 reservoirs and nearly 12,500 downstream river miles, while still not being able to meet the demand for the program within the Corps. In FY 22, the Corps was able to fund only 40% of requests from Corps districts for SRP involvement. TNC requests you increase funding to \$7.5 million for SRP in FY23.

Navigation and Ecosystem Sustainability Program (NESP): NESP is an important, dual-purpose program that allows the Corps to address both navigation and ecosystem restoration in an integrated approach along the upper Mississippi and Illinois rivers. Past committee support led to \$5 million in pre-construction engineering and design (PED) funding in the Corps' FY

2021 work plan. Then the Infrastructure Investment and Jobs Act (IIJA) FY22 work plan moved NESP into construction and provided it \$829.1 million, which included \$732 million for Lock and Dam 25 replacement and \$97.1 million for fish passage at Lock and Dam 22. TNC requests the Subcommittee continue its strong support for NESP by providing it \$84 million in FY23, including \$35 million for ecosystem restoration and \$49 million for PED at LaGrange Lock and Dam.

Chesapeake Bay Oyster Recovery: Ongoing oyster restoration work has functionally restored several tributaries in Virginia and Maryland and demonstrates that strong partnerships between private, state and federal agencies can accomplish tangible outcomes in the Chesapeake Bay. TNC thanks the Subcommittee for its strong support for oyster restoration and requests funding at \$5 million in FY23 to continue the essential work of restoring the eastern oyster.

Engineering With Nature: The Corps' Engineering With Nature (EWN) initiative is using a collaborative, science-based approach to better deliver a full range of economic, social, and environmental benefits from the Corps' water resources infrastructure. It is also leading work to share, train and support Corps districts and other partners on how to effectively develop nature-based projects. Its innovative approaches are building stronger, more resilient communities and a healthier environment. TNC was pleased Congress created a new budget line for EWN in FY21 and FY22 appropriations. We urge you to maintain funding for EWN at \$16.25 million in FY23 in its own budget line.

South Florida Ecosystem Restoration (SFER) Program: Congress made a historic investment last year to advance Everglades restoration projects, increasing funding for SFER to \$350 million in FY22, a \$100 million increase over FY21, and investing almost \$1.1 billion in SFER as part of the IIJA. With some of the largest and most important restoration projects now underway, TNC encourages increased funding for authorized Comprehensive Everglades Restoration Plan and SFER projects. In order to complete authorized projects and keep pace with state investments, Congress should significantly increase funding for SFER. TNC requests \$725 million for SFER in FY23.

Continuing Authorities Programs: TNC supports the Continuing Authorities Programs (CAP) that promote ecosystem restoration and the use of nature-based solutions, including beneficial uses of dredged material (CAP Section 204), aquatic ecosystem restoration (CAP Section 206) and project modifications for improvement of the environment (CAP Section 1135). In addition, WRDA 2020 clarified that small flood control projects (CAP Section 205) can use natural and nature-based features. For FY23, TNC urges you, at a minimum, to maintain funding for these programs at their FY22 enacted levels.

In addition, TNC supports the following projects and programs and requests your support for them at the FY23 requested level.

Project/Program	Account	Budget Request
Brandon Road Lock and Dam, Aquatic Nuisance Species Barrier, IL	Construction	\$47,880,500

Claiborne and Millers Ferry Locks and Dams (Fish Passage), Lower Alabama River	Investigations	\$400,000
Hatchie/Loosahatchie Habitat Restoration (Tennessee and Arkansas)	Investigations	\$400,000
Upper Mississippi River Restoration Program	Construction	\$55,000,000

Bureau of Reclamation

Upper Colorado River Endangered Fish Recovery and San Juan River Basin Recovery

Programs: These programs take a balanced approach to recovering four threatened and endangered fish species by implementing a range of basin-wide strategies, including improved management of federal dams and irrigation infrastructure, river and floodplain habitat improvement, stocking of endangered fish, and management of non-native fish species. Through these efforts, the two recovery programs provide Endangered Species Act compliance for more than 2,500 water projects. TNC supports the budget request for these programs, which includes \$7.655 million for the Endangered Species Recovery Implementation Program (Upper Colorado and San Juan River Basin) and \$21.4 million for the Colorado River Compliance Activities account. TNC requests continued funding for these activities in FY23.

WaterSMART and Drought Response Programs: In 2020, Congress modified the WaterSMART Program to allow grants to non-profit organizations working with traditional grant recipients, provide higher levels of match for multi-purpose projects and support nature-based solutions. These changes will help prioritize projects that both enhance water delivery reliability and benefit watershed health. Nevertheless, we remain concerned that some projects funded through WaterSMART grants can increase consumptive use of water, which makes water shortages worse. TNC requests your continued oversight of the grants, for example, by including report language similar to the language accompanying the FY20 Senate Energy and Water Appropriations bill (Senate Report 116-102 at page 65). That language directed “Reclamation to ensure that all projects funded under 42 U.S.C. 10364 are in compliance with 42 U.S.C. 10364(a)(3)(B) and to articulate the use of the conserved water with its annual award announcements.”

Similarly, grants associated with Reclamation’s Drought Response Program frequently fund new groundwater pumping. Given that development of a permanent or long-term new water supply through groundwater pumping is contrary to the other purposes of WaterSMART—to conserve water, build ecological resilience to the impacts of climate change and provide environmental benefit—TNC requests your oversight to ensure Reclamation prioritizes other drought resilience strategies over new groundwater pumping.

Cooperative Watershed Management Program: The Cooperative Watershed Management Program provides funding to support on-the-ground capacity to develop, plan and design watershed management projects. With the passage of the IIJA, funding for these capacity-building activities is more important than ever, as stakeholders often need dedicated resources to build a pipeline of multi-benefit watershed management projects at a more impactful scale. Additional funding is needed by on-the-ground project proponents to identify, plan and design new projects. TNC requests full funding for the Cooperative Watershed Management at \$20

million in FY23.

U.S. Department of Energy

TNC supports robust funding for multiple DOE programs that accelerate the advancement of clean energy technologies and facilitate the department's shift in focus toward decarbonization of the U.S. economy. This includes programs that were created or reauthorized by the Energy Act of 2020 and the IIJA. We encourage Congress to adequately resource community consultation processes across the Department's technology deployment programs, with specific emphasis in the Office of Clean Energy Demonstrations. Agency staffing for such work must be adequate to the complexity of the issues and the health, economic and civic capacity needs of underserved communities must be foregrounded in developing these projects.

Solar and Wind Energy Technologies: TNC requests full funding to support the overall research, development and deployment mission of these critical energy technology offices, including \$420 million for the Solar Technology Office and \$420 million for the Wind Technology Office.

Clean Energy Demonstration Projects: TNC requests at least \$250 million in FY23 funding to support the newly established Office of Clean Energy Demonstrations for technology-neutral solicitations focused on crosscutting energy challenges. We recommend the Office of Clean Energy Demonstrations prioritize technology demonstrations for the highest emitting sectors.

Industrial Energy Innovation Research and Development: To develop a robust portfolio of emerging technologies, TNC requests \$650 million for industrial decarbonization activities, including \$344 million for Energy Efficiency and Renewable Energy, \$281 million for Fossil Energy and Carbon Management, and \$25 million for the Office of Science.

Advanced Nuclear Energy: TNC requests full funding in FY23 for two critical programs established under the Energy Act of 2020: \$300 million for the Advanced Nuclear Fuel Availability Program and \$250 million for the Advanced Reactor Demonstration Program, including funding all year-three demonstration and risk reduction cost-share requirements in the proposals selected by DOE.

Electric Power Grid Modernization: TNC supports robust funding for several programs to implement DOE's Building a Better Grid Initiative. This request includes \$600 million for the Smart Grid Investment Program and \$500 million for the Transmission Facilitation Program. We also encourage the committee to include language directing the Secretary of Energy to facilitate the development of the Office of Grid Deployment, as authorized by the IIJA.

Carbon Capture, Utilization and Storage (CCUS) and Carbon Removal: TNC supports robust funding for the Office of Fossil Energy and Carbon Management's (FECM) mission to advance the deployment of a full suite of carbon management technologies. TNC requests \$607.5 million for CCUS and Power Systems. This amount would support DOE's research, development and deployment efforts for carbon capture, carbon utilization, carbon storage and FECM's contributions to the broader carbon dioxide removal crosscut program.

Advanced Vehicle Technologies: TNC supports robust funding to help advance the

decarbonization of the transportation sector or the development of new zero-carbon fuels for transportation and other end uses. To that end, we request \$602.731 million for the Vehicle Technologies Office.

Loan Programs Office: TNC supports the role of the DOE Loan Programs Office (LPO) in spurring commercialization and deployment of emerging technologies by providing loans and loan guarantees. TNC requests \$160 million for the Title 17 Innovative Technology Loan Guarantee Program to expand loan authority by \$16 billion, \$300 million for Advanced Technology Vehicles Manufacturing Loan Program (ATVM) and \$20 million for the Tribal Energy Loan Guarantee Program to cover credit subsidy cost or loan guarantees and direct loans. This request aims to provide additional loan authority, credit subsidy funding and program eligibility tweaks to further improve LPO's ability to finance innovative energy and manufacturing projects in the United States and help fund community grant-making and technical assistance for clean energy planning.

**Testimony for the Record to the U.S. House Appropriations Subcommittee on Energy &
Water Development (EWD) re Fiscal Year 2023 EWD Appropriations**

Katrina McMurrian, Executive Director, Nuclear Waste Strategy Coalition (NWSC)¹

May 27, 2022

The NWSC calls upon Congress to appropriate funds in Fiscal Year 2023 to the Department of Energy (DOE) and Nuclear Regulatory Commission (NRC) such that each agency has the sustainable annual funding necessary to undertake critical activities related to developing, managing, and regulating an integrated program for the storage, transportation, and disposal of the nation's spent nuclear fuel (SNF), Greater-Than-Class C (GTCC) waste, and other high-level radioactive waste (HLW). For DOE, relevant programs include:

- Fuel Cycle Research & Development program, which includes relevant subprograms:
 - Integrated Waste Management Systems (DOE request: \$53 million); and
 - Used Nuclear Fuel Disposition Research & Development (DOE request: \$46.875 million).
- Nuclear Waste Fund Oversight program (DOE request: \$10.205 million).

To conduct activities necessary to develop and manage a multi-generational, national integrated nuclear waste program and carry out the related recommendations herein, DOE needs sustained and significantly more funding for expansion of activities under these items.

As a general matter, direction to DOE and the NRC concerning nuclear waste management remains unclear. Despite new Congressional appropriations of \$27.5 million to DOE in FY 2021 and in FY 2022 for "expenses necessary for nuclear waste disposal activities to carry out the purposes of the Nuclear Waste Policy Act of 1982, Public Law 97-425, as amended, including interim storage

¹ The NWSC is an ad hoc organization representing the collective interests of member state utility regulators, consumer advocates, attorneys general, and radiation control officials; tribal governments; local governments; electric utilities with operating and/or shutdown nuclear reactors; and other experts on nuclear waste policy matters.

activities,” this funding did not establish the meaningful integrated nuclear waste management program that our nation needs but has lacked for more than a decade. Thus, our testimony focuses on the need for Congress to:

- Direct and sufficiently fund the establishment of a national integrated nuclear waste management program that addresses storage, transportation, *and* disposal;
- Direct and sufficiently fund the formation of a new, independent waste management organization and the orderly transition of these responsibilities from DOE; and
- Provide sustainable annual access to the Nuclear Waste Fund (NWF) for a national integrated program, whether managed by DOE or, preferably, a new, independent entity.

Consequences of Inaction on Nuclear Waste Management

The national nuclear waste management program established under the 1982 Nuclear Waste Policy Act (NWPA) was effectively terminated more than a decade ago by executive action. Subsequently, Congress has failed to provide meaningful direction or funding for that program or any national integrated nuclear waste management program. Since 1983, approximately \$56 billion has been credited to the NWF, including over \$21.5 billion collected from electric ratepayers and over \$30 billion in interest that continues to accumulate (approximately \$1.7 billion a year). The approximate \$44 billion balance sits stranded in U.S. Treasury Securities and unappropriated for its intended purpose. These facts have resulted in a *de facto* national policy of inaction that negatively impacts:

- *Host States & Communities.* The *de facto* policy indefinitely strands 80,000 metric tons of commercial SNF and HLW at operating and decommissioned reactor sites in 34 states without their consent. At shutdown sites, the stranded waste impedes beneficial property reuse.
- *All U.S. Taxpayers.* The *de facto* policy has already cost U.S. taxpayers more than \$9 billion, and this liability is growing by approximately \$2 million per day.
- *Electric Customers.* While no longer paying fees into the NWF per court order, ratepayers in

more than 40 states paid billions of dollars that are not being used for their intended purpose.

NWSC Call for Action & Specific Requests/Recommendations

Starting with the Subcommittee’s markup of the FY 2023 EWD bill, Congress should take action to mitigate these real consequences of the federal government’s inaction. To recognize that the federal government can and should establish a national integrated nuclear waste management program, and to set such a program up for success, Congress should immediately take the following steps:

- 1. Direct and sufficiently fund the establishment of a national integrated nuclear waste management program that is designed to make progress on permanent disposal in parallel with progress on consolidated interim storage (CIS) and transportation.**

DOE has conducted significant transportation work over the years and has recently re-initiated work on a consent-based siting (CBS) process to facilitate federal CIS facilities. However, regarding the critical third element, permanent disposal, DOE not only has taken Yucca Mountain off the table but also has suggested it cannot take action on permanent disposal until Congress provides new direction and funding. Thus, other than disposal-related R&D, DOE is not making measurable progress on permanent disposal, which frustrates progress on the other two critical parts of an integrated program—CIS and transportation. We are not alone in stressing an integrated approach. In its report, *Commercial Spent Nuclear Fuel: Congressional Action Needed to Break Impasse and Develop a Permanent Disposal Solution*,² GAO relayed that “nearly all of the experts we interviewed said the United States needs an integrated waste management strategy” (p. 30) and recommended that Congress direct DOE accordingly.

At a minimum, Congress should consider directing and funding constructive, near-term, disposal-related actions by federal agencies, such as (i) Development of generic repository

² U.S. Government Accountability Office. (2021). *Commercial Spent Nuclear Fuel: Congressional Action Needed to Break Impasse and Develop a Permanent Disposal Solution* (GAO-21-603).

standards by the Environmental Protection Agency and NRC; and (ii) Expansion of DOE's CBS work to incorporate disposal facilities in addition to CIS facilities. While the NWSC has numerous concerns about the CBS initiative, we want it to be successful, and the lack of progress on permanent disposal is perhaps the biggest impediment to siting CIS facilities.

Finally, we continue to request that the Subcommittee provide: (i) Funds for NRC and DOE to carry out their respective roles regarding siting and/or licensing of a repository and, simultaneously, private or federal CIS facilities; (ii) Funds for the continuation and expansion of constructive SNF transportation initiatives (assessment of infrastructure needs at shutdown sites; testing, certification, and procurement of railcars, licensed transportation containers, components; etc.); and (iii) Increased financial and technical assistance to tribal, state, and local governments for transportation-related emergency preparedness training and activities.

2. Direct and sufficiently fund the formation of a new, independent waste management organization and the orderly transition of these responsibilities from DOE.

Although the NWSC continues to support the establishment of a dedicated office in DOE that focuses on nuclear waste management, DOE has exhibited no interest in implementing this change.³ We believe the Blue Ribbon Commission on America's Nuclear Future (BRC) recommendation for a new, single-purpose organization remains the best solution for governance reform. While the DOE team seems committed to progress, the current structure falls short in comparison to a model that provides additional accountability and reasonably insulates the organization from political interference and excessive turnover in key positions. A new waste management organization could be structured in numerous ways, but we urge consideration of the government-owned corporation model (see H.R. 5979, last introduced

³ See May 3, 2021 letter from eight organizations to DOE Secretary Granholm and Nov. 23, 2021 response letter from DOE Secretary Granholm to NWSC Chair Katie Sieben.

by Congressman Upton in 2010)⁴ instead of models that set up government agencies with both politically-appointed leadership and oversight boards that tend to change with every administration and lack the long-term continuity needed to make progress on this issue.

3. Provide sustainable annual access to the NWF for a national integrated program, whether managed by DOE or, preferably, a new, independent entity.

We call upon the EWD Subcommittee to take the lead on reforming the federal budgetary treatment of the NWF such that sustainable annual access is provided to the funds collected from electric customers—as well as to accumulating interest—to support the development and management of a multi-generational, national integrated nuclear waste storage, transportation, and disposal program. Recognizing the importance of funding to program success, the BRC, members of Congress,⁴ and several other experts have urged NWF reforms. While appreciating the budgetary complexities involved in implementing these necessary reforms, the NWSC notes that Congress has recently navigated around such complexities to access similar funds (e.g., Land and Water Conservation Fund, Harbor Maintenance Trust Fund) and should find a similar path to ensure that the NWF is used for its intended purpose.

Uranium Enrichment Decontamination & Decommissioning (D&D) Tax

The NWSC opposes reinstatement of a uranium enrichment D&D tax. Although supportive of environmental cleanup of enrichment sites, U.S. nuclear-generating utilities and their customers should not be singled out again to pay for D&D of DOE facilities developed for national defense.

Closing

The NWSC appreciates your leadership and urges you to take action this session to make meaningful progress toward a national integrated nuclear waste management program.

⁴ *United States Nuclear Fuel Management Corporation Establishment Act of 2010*, as introduced by Congressman Fred Upton (H.R.5979) and the late Senator George Voinovich (S.3322).



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House Appropriations Committee
Subcommittee on Energy and Water

Fiscal Year 2023 Department of Energy Funding

May 9, 2022

As a leading technology provider to electric, gas and water utilities, Aclara Technologies, LLC – a wholly-owned subsidiary of Hubbell Incorporated¹ - respectfully urges you to prioritize modernization of the nation's electric distribution systems and funding to improve the performance, efficiency, and safety of our nation's energy and water distribution infrastructure in the Fiscal Year (FY) 2023 Energy and Water Appropriations bill. We specifically urge robust funding the Office of Electricity. We thank you for this opportunity to express our support for this funding and appreciate your consideration.

Aclara Technologies, LLC ("Aclara") provides smart infrastructure technologies to electric, gas and water utilities, with offerings in advanced metering, utility automation, methane sensing, device networking and communications, data management, analytics, and customer service. Over 1,100 utilities in thirty-six countries rely on proven Aclara solutions. There are currently 1,000 Aclara clients located in all 50 states and Aclara employs over 1,200 staff in the United States

¹ Hubbell Incorporated is an international manufacturer of high quality, reliable electrical and utility solutions for a broad range of customer and end market applications. With 2020 revenues of \$4.2 billion, Hubbell Incorporated operates 70 manufacturing facilities in the United States, employing over 9,550 Americans, and has additional facilities and employees around the world. The corporate headquarters is located in Shelton, CT. Hubbell Inc. acquired Aclara Technologies in 2018.

and over 190 internationally. Companies like Aclara prove that smart technologies mean jobs, not just at Aclara, but also at utilities in the form of installation and monitoring jobs.

Aclara offers its strong support for the advancement of technologies that can improve our nation's energy and water distribution networks by providing enhanced monitoring, detection, and control capabilities. These technologies are an important and cost-effective way to increase reliability, efficiency, and safety of our ageing infrastructure. Supporting the advancement of these technologies will be crucial as the country's energy and water distribution networks continue to age and as the risks for utilities and network operators rise.

Electrical Distribution Infrastructure

The Department of Energy's Office of Electricity (OE) performs vital work to promote grid modernization, yet the office has been historically underfunded. We respectfully urge significant and robust funding for OE in FY2023. OE should work to advance widespread deployment of the many commercially available technologies to increase the resiliency, reliability, and safety of the electric grid across the country.

Technologies that improve the performance, efficiency, and safety of the country's electric distribution networks are essential to our economic growth, health and safety, and overall resiliency. Solutions that combine end-to-end solutions – from initial plan through implementation – offer new visibility and control to monitor millions of electric distribution lines while reducing costs, improving reliability and actively engaging customers. Sensing/advanced metering infrastructure technologies are vital to:

- Distributed generation – integrating electricity generated by windmills, solar arrays, independent power facilities and microgrids

- Fault detection and outage management – identifying and locating outage-causing faults to get customers lights back on faster
- Load control and demand response – controlling load fluctuations from increased demand, aging infrastructure, renewables and distributed generation
- Substation monitoring – improving reliability and decreasing the risk of blackouts and brownouts caused by aging infrastructure
- Load monitoring – understanding when circuits may be overloaded and quickly respond with corrections
- Conservation Voltage Reduction – managing voltage levels on feeders to reduce loads and conserve energy

The U.S. currently has over 500 million above-ground utility poles with over 5 million miles of overhead distribution conductors fed from greater than 62,000 distribution substations. The technology to verify the health of the distribution assets such as the position and orientation of utility poles and the attached conductors is in development to enable utilities to sense, for example, a car has collided with a utility pole or an overhead conductor has dropped from the utility pole. Other key analytics about clusters of these conditions, as when windstorms or ice buildups cause cascade failures of conductor support systems, enable utilities to respond in real time to failure events as well as better estimate resources required for large scale recoveries. The technology in development is also very cost-effective, as it can be installed on new distribution system construction and easily retrofitted to existing distribution infrastructure. In addition to ensuring funds are dedicated to the advancement of distribution infrastructure, we also urge you

to support appropriations for technologies to make our electrical distribution asset monitoring systems “smarter,” particularly when failure of these systems presents a safety risk to the public.

Also of importance in discussions about electric grid infrastructure is the need to reduce greenhouse gas emissions. For decades, sulfur hexafluoride (SF6) has been used as a dielectric insulator in gas insulated systems. One pound of SF6 has the same global warming potential as 22,800 pounds of CO2. Additionally, since it is such a stable compound, it has a life of 3,200 years in the atmosphere vs 200 years for CO2. The US Environmental Protection Agency (EPA) has established a voluntary program in which partner companies agree to reduce SF6 emissions through technically and economically feasible actions.

Although SF6 designs have been commercially available and have functioned reliably for the past 30 years, new available technologies have emerged at comparable prices that offer superior performance and a greatly reduced carbon footprint. These alternatives should be strongly promoted in grid devices operating under 72kV. Unfortunately, there has not been a good alternative found for SF6 for grid equipment above 72kV. As such, we urge DOE to advance safe and effective capture and reuse technologies for SF6 in grid equipment above 72kV.

In conclusion, Aclara believes that technologies that improve the performance, efficiency, and safety of the country’s energy and water distribution networks are essential to our economic growth, health and safety, and overall resiliency. We urge you to ensure that FY2023 appropriations includes robust funding of the Office of Electricity and funds for the advancement of technologies that will make our electric distribution networks smarter, safer, and more efficient. Again, thank you for providing this opportunity to submit testimony. We would also appreciate the opportunity to brief you or your staff on the status of these technologies and how additional research can help their advancement. We look forward to working with you.

Contact Information

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Testimony of the Business Council for Sustainable Energy

Regarding the

FY2023 Energy and Water Development Appropriations Bill

Lisa Jacobson, President

May 13, 2022

Chairmen DeLauro and Kaptur and Ranking Members Granger and Simpson:

The Business Council for Sustainable Energy appreciates the opportunity to submit testimony in support of funding for the clean energy programs at the Department of Energy in the Fiscal Year 2023 Energy and Water Appropriations Bill.

The BCSE is a coalition of companies and trade associations from the energy efficiency, energy storage, natural gas, renewable energy, sustainable transportation and emerging decarbonization technology sectors. It includes independent electric power producers, investor-owned utilities, public utilities, equipment manufacturers, commercial end users and service providers in energy and environmental markets. Founded in 1992, the coalition's diverse business membership is united around the revitalization of the U.S. economy and the creation of a clean, secure, and reliable energy future in America.

The BCSE is pleased to have an independent small- and medium-size businesses initiative under its banner, the Clean Energy Business Network (CEBN). Together, the BCSE and CEBN represent a broad range of the clean energy economy, from Fortune 100 companies to small businesses working in all 50 states and over 350 Congressional districts. On a national basis, these industries support over 3 million U.S. jobs.

Our organizations were encouraged to see Congress enact the Infrastructure Investment and Jobs Act (IIJA), P.L. 117-58, to provide an influx of funding for clean energy and energy efficiency programs at DOE in areas such as weatherization and state energy programs, hydrogen hubs, and the new DOE Office of Clean Energy Demonstrations. Congress has recognized the United States of America must lead the world in clean energy and energy efficiency technologies to meet the need for energy security and grid reliability and safety, while boosting economic growth and reducing environmental impacts. While the IIJA investment is monumental, it does not negate the need for sustained, year-on-year increases to all of DOE's clean energy, energy efficiency, and innovation activities.

We urge Congress to continue to adequately fund Department of Energy (DOE) clean energy programs for the offices of Energy Efficiency and Renewable Energy (EERE), Fossil Energy and Carbon Management (FE), Electricity Delivery and Energy Reliability (EDER), Advanced Research Projects Agency-Energy (ARPA-E) and other essential DOE clean energy programs. These federal research development and deployment funds can be used to leverage business investment to accelerate deployment and emissions reductions in all sectors of the economy.

The *2022 Sustainable Energy in America Factbook* recently released by the BCSE and BloombergNEF shows that despite the lingering pandemic, global supply chain bottlenecks, rising inflation, and considerable uncertainty in 2021, the clean energy and energy efficiency transition continued, with a record-breaking year for deployment of renewable power, battery storage and sustainable transportation, and an unprecedented injection of new capital into companies, technologies and projects. We encourage you to build upon this momentum with sustained support for clean energy programs in FY2023.

The Council welcomes the opportunity to share information from the *Factbook* and we look forward to working with you throughout the FY2023 budget cycle. Please feel free to reach out to Ruth McCormick at rmccormick@bcse.org with any questions.

A document containing FY2023 clean energy industry funding requests for BCSE members in the renewable energy, energy efficiency, energy storage, and natural gas sectors can be found [here](#) for your reference.



The National Hydropower Association, Inc.

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**National Hydropower Association - Malcolm Woolf, President and CEO
Committee on Appropriations – Subcommittee on Energy and Water Development
DOE EERE Water Power Technologies Office; Corps of Engineers; Bureau of Reclamation**

The National Hydropower Association (NHA) respectfully requests \$222,000,000 for the Department of Energy's (DOE) Water Power Technologies Office (WPTO) in the Fiscal Year (FY) 2023 Energy and Water Development Appropriations measure. NHA recommends \$85,000,000 for hydropower and \$137,000,000 for marine energy. NHA also supports robust funding for the operations and maintenance (O&M) programs of the U.S. Army Corps of Engineers (USACE) and Bureau of Reclamation (BuRec) to increase capacity and generation at their facilities, addressing the billions of dollars of backlogged O&M needs.

Funding Justification - The U.S. water power industry has tremendous beneficial impacts on our nation's electric grid, the economy, and environment. In 2020, hydropower delivered almost 40% of total U.S. renewable electricity generation and pumped storage projects provided 93% of total energy storage in the country. Hydropower also avoids approximately 200 million metric tons of CO₂ emissions each year. In addition to providing affordable, renewable power to the grid, hydropower and pumped storage help integrate greater amounts of variable renewable generation, such as wind and solar, while maintaining grid reliability and resilience. Finally, the water power industry employs more than 60,000 Americans, creating good-paying jobs across the country.

However, the water power industry is poised to do even more to support a 100% clean energy future. The U.S. has significant underutilized water power resources, including non-powered dams, conduits, new pumped storage potential, and untapped marine energy. Advancement of new and innovative technologies, operations, and approaches to harness these resources in a globally competitive marketplace is enhanced by federal funding that augments research, development, and deployment (RD&D) efforts being led by industry with support from

universities and the National Labs. A growing U.S. water power sector will help address climate change, reduce carbon emissions, assist in grid reliability and resiliency, and advance our national economic goals.

NHA commends Congress for its increased support of the WPTO in recent years, culminating in \$162,000,000 for FY 2022. While a step in the right direction, this funding is well below other DOE renewable programs. Past policymakers had the foresight to make significant and sustained federal technology RD&D investments in the wind and solar industries over many years. Thanks to these prudent investments, wind and solar technologies improved and the costs for deploying them went down. A “solar-scale” level of federal investment is now required to accelerate the pace of demonstrations and deployments, reduce costs, and increase adoption of advanced water power technologies along a similar trajectory of more mature renewables.

Overview of DOE Water Power Technologies Office Investments - Congress reauthorized DOE’s water power activities through passage of the Water Power R&D Act of 2020 and the Reliable Investment in Vital Energy Reauthorization Act (RIVER Act). The WPTO supports innovation of advanced technologies to increase power production and reduce costs, improve grid reliability and resilience, create new market opportunities that improve economic growth, and fund cross-institutional foundational research to support workforce development.

Hydropower - NHA requests \$85,000,000 for the hydropower program. Hydropower is a proven renewable electricity resource, accounting for nearly 7% of all U.S. electricity production. Increased WPTO investments could significantly expand electricity generation from this resource.

Growth opportunities for hydropower in the U.S. include adding generation to non-powered dams. Currently, only 3% of the approximately 90,000 existing dams in the U.S. generate electricity. Other opportunities include increasing efficiencies and expanding capacity at existing

hydropower projects, new pumped storage facilities, and new small hydro development. Pumped storage represents a significant opportunity because it provides ancillary services that ensure grid reliability, is the only proven long-duration energy storage system in the U.S., and can integrate intermittent renewable generation resources on the grid.

The WPTO invests in hydropower technology RD&D for innovative, standardized, and modular approaches to hydropower development that can lower project costs compared to traditional development which requires site specific engineering. For small hydropower, the WPTO supports standardization of new turbine designs, as well as new advanced materials and manufacturing across the sector, including applications at non-powered dams, irrigation channels, and other waterways, including greenfield sites. This work increases generation opportunities with innovations that also improve environmental performance. It also helps reduce costs for companies that have capitalization challenges to fund this work. The WPTO supports DOE's Advanced Energy Storage Initiative and focuses on the role of hydropower and pumped storage in grid reliability and resiliency by supporting innovative technologies and conducting new research to evaluate and improve the flexibility and grid services provided by these projects. The WPTO also supports development of innovative environmental mitigation technologies, such as novel fish passage systems and other advancements.

Marine Energy - NHA requests \$137,000,000 for the marine energy program. Marine energy is a significant renewable resource that can make a material contribution to decarbonize our domestic energy portfolio. DOE recently reported that U.S. marine energy resources have the technical potential to provide 2,300 terawatt hours a year of electricity generation – 57% of all U.S. electricity generated in 2019. Marine energy technologies are rapidly innovating, with a number

of systems globally nearing commercialization. However, Congress must invest additional funding to keep cutting-edge development in the U.S. and ensure its future domestic viability.

Last year, NHA's Marine Energy Council (MEC) released a Commercialization Strategy for Marine Energy that set technology deployment targets starting with 50 megawatts by 2025. This represents the critical first steps for the domestic marine energy sector to materially contribute to the effort against climate change. Follow on targets include 500 megawatts by 2030 and one gigawatt by 2035. To achieve these targets, federal policymakers must dramatically increase technology advancement and testing support.

There are a wide range of design approaches to marine energy systems. It is likely that different designs will be most effective in diverse types of resources or for various market applications. Increased funding is required to support the design, construction, and validation of marine energy systems in open water deployments and alongside offshore co-location opportunities, with a balanced approach that reflects the higher funding requirements of more mature designs. For example, marine energy systems can be a cost-effective and reliable power source in several distributed Blue Economy markets, such as aquaculture, desalination, oil and gas production, underwater data centers, and other emerging needs. Funding is required to tailor systems to specific applications and demonstrate their performance in order to facilitate adoption in these markets.

Marine energy technologies also present unique engineering challenges that require collaborative foundational innovations by cross-institution teams of researchers. NHA urges dedicated funding for National Marine Energy Center operations and continuation of support for foundational research activities led by universities and other research institutions affiliated with

the Centers to accelerate development of the marine energy sector and help train a skilled workforce for the Labs and industry.

Finally, a key barrier to marine energy technology development is the difficulty of testing new designs. Funding is needed to establish and expand testing infrastructure including open-water test centers, such as PacWave, along with other capabilities. Funds are also needed to conduct the tests, through regular, consistent, and annual system and sub-system Funding Opportunity Announcements. Additional funding is also required for the TEAMER program along with environmental monitoring technologies and research to expedite permitting and in-water demonstration. NHA also recommends continued close coordination with other agency partners, including the U.S. Navy on national security applications for marine energy technologies.

Other Recommendations - NHA recommends that DOE lead an effort with FERC, USACE, BuRec, National Oceanic and Atmospheric Administration, and other federal resource agencies to review and provide recommendations on how to address the amount of time, effort, and funding that is required to permit, license, and relicense marine energy projects. Finally, NHA urges Congress to increase funding to USACE and BuRec to operate, maintain, and upgrade their existing projects, as well as to add non-federal hydropower development to their non-powered infrastructure. NHA also believes there are ways to make this investment that do not increase costs to the power customers. The federal hydropower system makes up approximately half of U.S. hydropower generation. Many of these projects are candidates for upgrades and/or have backlogged O&M needs. USACE and BuRec projects make the federal government itself one of the largest renewable energy providers in the country. Reinvesting in these projects will help to address climate change, provide economic and job opportunities, and maximize the benefits of this public infrastructure.

Testimony for House Appropriations Subcommittee on Energy and Water Development**Maria Korsnick****President and Chief Executive Officer, Nuclear Energy Institute¹****May 26, 2022**

The strategic R&D investments directed by this Committee have helped the U.S. reclaim its position as the global leader in nuclear energy innovation. To sustain the undeniable momentum toward widespread deployment of the technological breakthroughs enabled by these investments, NEI recommends a minimum of \$2.2 billion for Office of Nuclear Energy (NE) programs in FY2023. Recommendations for specific program elements are set forth below. The funding level for those DOE NE program elements that are not discussed below should be consistent with or greater than FY2022. Recommendations are also provided for specific programs within the Office of Clean Energy Demonstrations, NNSA, the Office of Science, and the NRC.

This increased investment is consistent with achieving first-of-a-kind operations of advanced nuclear reactors by 2030 and supporting the increased use of nuclear energy to achieve a reliable, affordable, decarbonized grid by mid-century or sooner. Congress should also continue to provide adequate funding necessary to meet commitments to affected communities and states conducting cleanup of DOE's shutdown uranium enrichment facilities and former nuclear weapons material production facilities.

DOE Office of Clean Energy Demonstrations We thank Congress for its continued support for the two ARDP projects and the establishment of the Office of Clean Energy Demonstrations.

¹ NEI is responsible for establishing nuclear industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI members include entities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel cycle facilities, nuclear material licensees, and other organizations and entities involved in the nuclear energy industry.

Advanced Reactor Demonstration Program (FY23 Recommendation – \$70 million) .

Microreactor Demonstration Program (FY23 Recommendation - \$30 million) NEI recommends establishing a new demonstration focused on rapid deployment of microreactors. The total program cost would be \$150 million.

DOE Office of Nuclear Energy

Advanced Reactor Demonstration Program (FY23 Recommendation – \$235 million) The ARDP program is helping develop a pipeline of technologies for demonstration and NRIC is supporting demonstrations and deployment. NEI recommends: Risk reduction for future demonstrations: \$140 million, NRIC: \$75 million, Regulatory Development: \$15 million and Advanced Reactor Safeguards: \$5 million.

Advanced SMR R&D Support (FY23 Recommendation – \$211 million) Demonstrating the next generation of advanced light water small modular reactors will support both domestic deployment and export of U.S. technology and enable broad U.S. leadership in new technologies.

Light Water Reactor Sustainability (FY23 Recommendation – \$62 million) Increased funding will enable the program to accelerate LWR modernization efforts while continuing to support hydrogen demonstrations. Not less than \$12 million should be used to support new or previously awarded hydrogen demonstration projects.

Advanced Reactor Technologies (FY23 Recommendation – \$70 million) NEI recommends the funding level for the microreactor program and MARVEL should be a minimum of \$16 million and \$20 million, respectively. The latter will support fuel acquisition and construction in FY23. The ARC-20 program should be funded at \$15 million.

Versatile Test Reactor (FY23 Recommendation – \$45 million)

Accident Tolerant Fuels (FY23 Recommendation – \$165 million) – The industry is working aggressively to accelerate the commercial development, testing, and licensing of accident tolerant fuels. \$120 million is recommended to continue the participation of the industry-led teams in the cost-shared R&D program including support for the testing, code development, and licensing of ATF with higher fuel utilization, \$10 million is recommended to continue silicon-carbide development, and \$35 million is for laboratory specific work in support of ATF.

Advanced Nuclear Fuel Availability Program (FY23 Recommendation – \$360 million: \$300 million for commercial enrichment and deconversion capacity and \$60 million for downblending of HEU) – Russia, the only commercial supplier of HALEU, is no longer a viable supplier. The urgency to develop a domestic HALEU supply chain has increased and an alternate short-term supply of HALEU must be found to bridge the gap before domestic capacity is available, or else current demonstration projects will be at risk. Therefore, \$300 million is requested for FY23 to support the deployment of a competitive commercial HALEU supply chain in the U.S. in the coming years. In the meantime, the fastest path to support near-term needs is a fresh HEU downblending bridge program. For FY23, \$60 million is requested for the bridge program. The total cost of a downblending bridge program is expected to be less than \$160 million.

TRISO Fuel and Graphite Qualification (FY23 Recommendation – \$37 million)

Gateway for Accelerated Innovation in Nuclear (FY23 Recommendation – \$10 million)

High Enriched Uranium Recovery from EBR-II spent fuel (FY23 Recommendation – \$25.75 million) – This funding level is requested to transition EBR-II spent fuel processing operations to seven days a week, 24 hours a day to meet the needs of the industry.

Nuclear Waste Disposal (FY23 Recommendation – \$100 million) The estimated taxpayer liability for DOE's failure to satisfy its obligation under the NWPA has reached over \$40 billion

with almost \$9 billion already being paid from the Judgment Fund. The funding for Nuclear Waste Disposal should be increased substantially and DOE should be directed to re-establish an organization to resume management of the program and to begin implementation of an integrated nuclear waste management system that allows for private consolidated interim spent fuel storage approaches.

Directed R&D and University Programs (FY23 Recommendation – \$161 million) Direct funding for university programs provides stability for all programs. We support DOE's proposal to create the new program line that includes NEUP, SBIR/STTR, and TCF.

International Nuclear Energy Cooperation (FY23 Recommendation – \$10 million) The Office of Nuclear Energy plays a critical role in facilitating international nuclear energy cooperation. This is critical to promoting the adoption of U.S. nuclear technologies abroad, assisting allies and partners in achieving their energy security and climate goals while creating American jobs and promoting U.S. leadership in nuclear safety, security and nonproliferation.

Program direction (FY23 Recommendation – \$100 million) The responsibilities that DOE NE is managing have increased substantially over the last few years while the staffing levels have reduced and program direction funding has remained roughly constant. This confluence of events has created challenges in many areas including contracting management and execution. An increase in program direction funding is necessary to ameliorate these issues.

DOE Office of International Affairs (FY23 Recommendation – \$62 million) The Office of International Affairs plays a vital role in enhancing global energy security and increasing U.S. energy exports and trade. Given the important role that nuclear energy plays in achieving these objectives, industry encourages prioritization of nuclear energy cooperation in close coordination with the Office of Nuclear Energy.

NNSA - Uranium Reserve (FY23 Recommendation – \$150 million) The uranium reserve will create a national security strategic stockpile and preserve critical fuel cycle capabilities.

Nuclear Regulatory Commission (FY23 Recommendation – \$35 million for Advanced Reactor Regulatory Infrastructure Activities and \$20 million for International Cooperation and Assistance Activities) Suggested report language: The Committee emphasizes the importance of timely, efficient, and effective regulatory activities related to advanced nuclear energy to meeting crucial climate and energy security goals. The Committee recommends not less than \$35,000,000 for Advanced Reactor Regulatory Infrastructure Activities.

Nuclear Supply Chain (FY23 Recommendation – \$5 million). The DOE should establish a program that is focused specifically on the nuclear supply chain needed to successfully deploy advanced reactors and \$5 million should be initially provided for this purpose. This new nuclear supply chain program could be established in the Office of Nuclear Energy or within the Office Manufacturing and Energy Supply Chains.

Low Enriched Uranium Supply for the Existing Fleet The U.S. reactor fleet currently obtains about 20% of its enriched uranium from Russia. The U.S. nuclear energy industry is committed to ceasing reliance on Russian enriched uranium. NEI encourages the appropriations committee to work with the authorizing committees to appropriately fund new programs to increase domestic mining, conversion, and LEU enrichment capacity and increase diversity of supply.

DOE Office of Science Isotope R&D and Production Program (FY23 Recommendation – \$102.451 million) Suggested report language: The Committee remains interested in ensuring that a sufficient supply of Strontium-90 is available for industrial purposes, utilizing legacy materials, and provides \$5,000,000 within available funds to carry out the findings of the FY-221 Sr-90 plan to prepare capsules for removal and transfer for beneficial use.

Michael G. Bindner, Principal Investigator, The Center for Fiscal Equity

Thank you for the opportunity to submit testimony on the Energy and Water Development Appropriation for FY2023. I will focus on research on electric vehicles, providing analysis of the distribution of funds as part of Committee reports, the budget process itself, and the need for increased professional staffing to prepare more detailed committee reports, and the possibilities of regional government.

I propose we ELIMINATE ALL FUNDING for designing intelligent cars and developing charging stations and better batteries. Enough batteries have caught fire and enough automated cars have crashed into trees or humans to know that it is time to try something else. There are better modalities and they are available now.

Research funds can instead focus on the development of automated cars with central control (rather than its own AI) and energy distribution (rather than being hampered by economically damaging battery development). This is old and proven technology, i.e., electric trains and buses.

We can pilot this now, in cooperation with the Departments of Energy, Commerce and Transportation, automobile manufacturers, utility companies and eventually selected local governments.

The same consortia that fund the project can be the backbone for implementing it. Individuals could own cars, while some would be for hire (with monitoring, but not drivers). Debit cards or a link to checking accounts would pay for the car itself (either to rent or own), the roadway and the use of energy and computer services.

Prices for accessing the road network would vary based on congestion and vehicles could be taken to a public transportation hub (which might be located at their children's school), with the vehicle returning home empty or going to the next fare. If congestion is low, it may be affordable to drive to work. If it is high, prices for public transit and commuting would be adjusted accordingly.

Energy infrastructure to power the system and facilitate communication would also carry energy and data services, so add xFinity and Cox to the consortium. This also gives us the incentive to improve the grid. We only need willingness to do this. The technology is already there.

Next we move to committee report information, the budget process and the possibilities of regional finance. In order to provide a more complete picture of the impact of this appropriation later should be included on the impact of appropriations within each state and federal region. This should be in the appropriation Committee report rather than the legislation itself.

Reporting should focus on where money is actually used to mandate how funds are spent. This should focus on who benefits from spending rather than who performs the work. Pilot projects, grants to improve the grid, water development and anything administered out of a regional office (or supporting it - such as telecommunications) could be classified regionally. Research grants would as well. Other items, including those involving production of nuclear fuel, would be counted outside regional estimates.

These data likely already exist or can be easily collected from departmental budget offices. This should be true for both planned spending and historical patterns. Committee staff would then amend these data to take into account the appropriations

bill. In the future, submissions will include state and regional data in the current services budget, as well as the President's proposals.

This information will allow the public and the committee visibility on the distributional equity of the appropriation. Again, this is not to force conformity, however it will allow adjustments to certain projects to assure adequate support for legislation. Information should be for the total appropriation in each region and state, with the number of Representatives and Senators listed for each region and state.

Explanatory material would address any imbalances in spending (for example, the fact that Massachusetts contains a high number of research universities and associated corporations.

The appropriations process cannot continue on its present course. For whatever reason, bipartisanship and the desire for an effective government has been found the exception rather than the rule. This requires continuing appropriations, often until February, complicating contracting, especially new contracts.

The *Budget Control Act* must be strengthened in the following way. Spending caps should be realistic rather than punitive so that inaction will not stop the appropriations process. A joint resolution would be enacted rather than a concurrent resolution, with automatic enactment of appropriations at current services levels at the beginning of the fiscal year.

Subcommittees do not lose power, as supplemental appropriations can (and will) be enacted in those cases where action is not completed in time. This takes away the incentive to hold up the process rather than compromise in a timely manner.

This brings us back to the utility of a regional analysis of spending. Spending priorities would be compared with VAT revenues collected in each region, with the goal of achieving balance. If the Appropriations Subcommittees were organized, in part, by region, such an exercise would be natural. VAT rates could be regionalized with the goal of a regionally balanced budget, although a constitutional amendment would be necessary for this to occur (such taxes are considered an excise, which must currently be uniform nationwide).



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**PUBLIC WITNESS TESTIMONY
FY 2023 APPROPRIATION**

**TO: The Honorable Marcy Kaptur, Chairwoman
The Honorable Michael K. Simpson, Ranking Member
House Appropriations Subcommittee on Energy and Water Development, and
Related Agencies**

**SUBJECT: Continued Funding for the Colorado River Basin Salinity Control Program
under Reclamation's Basinwide Program**

**FROM: Mike A. Hamman, P.E.
New Mexico State Engineer**

DATE: May 25, 2022

Congress authorized the Colorado River Basin Salinity Control Program (Program) through the Colorado River Basin Salinity Control Act (Act) in 1974 to offset increased damages caused by continued development and use of the waters of the Colorado River. Congress has directed the Secretary of the Interior to implement a comprehensive program for minimizing salt contributions to the Colorado River. Reclamation serves as the lead federal agency in implementing the Program. **Reclamation** primarily institutes salinity control through its **Basinwide Program**. A funding level of **\$10.7 million** is required in 2023 to prevent further degradation of the quality of the Colorado River and a commensurate increase in downstream economic damages to water users.

In the early years of the Program, Reclamation implemented salinity control through large projects, which were funded with specific line-item amounts. In 1995, Congress amended the Act and created Reclamation's Basinwide Program. Under this program, Reclamation funds competitive proposals for projects which will decrease the salt load to the Colorado River. Most of the proposals target off-farm irrigation distribution systems such as canals and laterals. The lining or piping of canals and laterals prevents leakage of water into the groundwater system and the dissolution and transportation of salts to the Colorado River and its tributaries. It is more efficient and cost effective for Reclamation to perform the off-farm distribution system improvements prior to NRCS treating the on-farm acres with salinity control practices (i.e., Reclamation should pipe a canal or lateral prior to the Natural Resources Conservation Service (NRCS) putting a pressurized sprinkler system on farm). Shortfalls in recent Basinwide Program funding levels have led to inefficiencies in the implementation of the overall Program. The funding amount identified above is required to get the Basinwide Program back on pace with the overall Program implementation needs.

Waters from the Colorado River are used by approximately 40 million people for municipal and industrial purposes and used to irrigate approximately 5.5 million acres in the United States. Natural and man-induced salt loading to the Colorado River creates environmental and economic damages. In 2020 the Bureau of Reclamation (Reclamation) estimated the *quantifiable* damages to Lower Basin water users due to elevated salinity levels at about \$354 million per year. Modeling by Reclamation indicates that this will rise

to approximately \$671 million annually by the year 2040 without continuation of the

Program. Damages include:

1. a reduction in the ability to reclaim and reuse water
2. a reduction in the yield of salt sensitive crops
3. increased use of imported water and cost of desalination and brine
4. a reduction in the useful life of galvanized water pipe systems, water heaters, faucets, garbage disposals, clothes washers, and dishwashers
5. an increase in the cost of cooling operations and the cost of water softening
6. an increase in the use of water and the cost of water treatment, and a corresponding increase in sewer fees
7. a decrease in the lifespan of treatment facilities and pipelines, and
8. difficulty in meeting wastewater discharge requirements to comply with National Pollutant Discharge Elimination System permit terms and conditions, and an increase in desalination and brine disposal costs necessary to minimize accumulation of salts in groundwater basins.

New Mexico is a member State of the Colorado River Basin Salinity Control Forum which is charged with reviewing the Colorado River's water quality standards for salinity every three years to facilitate compliance with the Clean Water Act. In so doing, it adopts a Plan of Implementation consistent with these standards. The level of appropriation requested in this testimony is in keeping with the adopted Plan of Implementation.

In summary, implementation of salinity control practices through Reclamation's Basinwide Program has proven to be a very cost-effective method of controlling the salinity of the Colorado River and is an essential component to the overall Program. Adequate funding levels for salinity control within this Program will prevent the water quality of the

Colorado River from further degradation and significant increases in economic damages to municipal, industrial and irrigation users. The State of New Mexico stands in support of funding this program.

**Testimony by Phillip M. DeLaine, Jr., President of United Barrier Technologies, Inc.¹,
Submitted to the House Appropriations Committee, Subcommittee on Energy and Water
Development, May 27, 2022**

**RE: FY2023 Budget for the U.S. Army Corps of Engineers, Engineer Research and
Development Center, Coastal & Hydraulics Laboratory**

Chairwoman Kaptur, Ranking Member Simpson, and Members of the Energy and Water Subcommittee on Appropriations, thank you for the opportunity to submit the following testimony in support of funding **an additional \$4 million for U.S. Army Corps of Engineers, Engineer Research and Development Center (ERDC), Coastal & Hydraulics Laboratory for test and evaluation of new innovative flood control barriers.** Current flood control solutions, levees and floodwalls, are outdated, unreliable and expensive, and are unable to protect our nation from increasing flooding due to climate change. Congress should allocate greater resources for new innovative flood control barriers.

The Socioeconomic Impacts of Flooding. Flooding is the most pervasive natural disaster in the United States. For example, Hurricane Harvey caused \$125 billion in damage. Harvey's hurricane flooding forced 39,000 people out of their homes, destroyed one million motor vehicles and forced 200,000 homes to lose power.²

In spring 2019, the Midwest experienced severe flooding causing over \$20 billion in damages to public and private property and losses to crops and livestock. Over 80 levee systems within the

¹ United Barrier Technologies is focused on developing new innovative flood control solutions that will transform the Flood Control Industry.

² How Much Damage Did Hurricane Harvey Cause? <https://www.hurricaneharveyfirm.com/blog/2020/january/how-much-damage-did-hurricane-harvey-cause/>

Army Corps levee portfolio were overtopped or breached. Over 700 miles of levees were damaged.³

Climate change and the concentrating of population and economic activity in flood-prone areas are increasing flood risk. This has implications for prosperity and economic security as well as societal wellbeing because flooding, typically, affects the poorest and most marginalized populations more deeply. It is incumbent on the Federal Government to test and evaluate new modern flood control barriers with vastly improved resilience to flood risk.

Deficiencies of Levees and Floodwalls. Sumerians pioneered using earthen levees to protect against major flooding in southern Mesopotamia from around 3500 B.C. Today, the United States continues to rely on these ancient, pre-industrial, flood control solutions. There are over 100,000 miles of levees and floodwalls throughout the United States. These legacy flood control solutions have significant flaws including:

- 1) **Permanent Structures that Block Public View and Water Access.** These permanent structures are huge, elongated, monolithic, structures that block the public's view and access to water. These restrictions negatively impact property values, tourism, business, the community's aesthetic appeal and the public's enjoyment of the seas. For these reasons, any proposals for the construction of these legacy solutions are often met with considerable public resistance and litigation.
- 2) **Permanent Structures that Fail.** Levees and floodwalls have unacceptably high failure rates. Dirt is an essential element that makes up levees. However, the presence of water causes dirt to become unstable. As a result, as water levels rise, so do the risks of levee

³ Infrastructure Report Card: Levees <https://infrastructurereportcard.org/wp-content/uploads/2017/01/Levees-2021.pdf>

structural failures. Research shows that levees start to fail at 50% of their protective height.⁴ Home owners living near levees have a 25%+ chance of having their homes destroyed by flood waters caused by failed levees.⁵

3) Permanent Structures that Have Negative Impacts on the Environment. They:

- Interfere with the natural development of plant life (flora).
- Interfere with the natural development of animal life (fauna).

4) Expensive to Build. The average cost for levees and floodwalls is \$57 million per linear mile. These costs include planning, materials, equipment, labor and cost creep due to long construction times.

Requirements for the Next Generation Flood Control Barriers. The general public wants mobile flood control barriers that allow views of the water and access to the water, barriers that will not fail, barriers with minimal impacts to the environment and barriers that can be deployed at a reasonable cost. It is imperative that ERDC investigate new innovative flood control solutions with the following characteristics:

1) New Flood Control Barriers Should be Mobile. Mobile, railcar-based barriers can be rolled into position only during flood emergency periods, and kept out of site in storage yards when not needed. In short, the barrier should be visible to the public when necessary and out of view when not. This will allow the public to maintain views of the water and access to the water. Communities will also maintain their aesthetic appeal and property values.

⁴ Obtaining Fragility Curves on Levees Subjected to Flooding. https://www.ecsmge-2019.com/uploads/2/1/7/9/21790806/0622-ecsmge-2019_lopez-acosta.pdf

⁵ Levees in the USACE Galveston District. <https://www.swg.usace.army.mil/Portals/26/docs/PAO/Levee.pdf>

- 2) **The Flood Control Barriers Should be Made of Very Heavy Steel.** Heavy steel barriers are highly reliable and cannot be breached by water. Their weight can be supplemented with ballast flood water taken from the flood location. Transitioning to steel barriers will also invigorate the steel and railcar industries in the United States.
- 3) **Minimal Environmental Impact and Climate Change Adaptable.** The railroad tracks have a small footprint and minimal impact on flora and fauna. The mobile barriers can adapt to climate change by swapping out shorter railcars with new taller ones.
- 4) **Provide Flood Protection for Marginalized Communities.** A mobile flood control barrier can be deployed cost-effectively to low-income communities. The only infrastructure needed is railroad track. Railroad track can also provide much-needed transportation options, including: trolleys, bike paths and walkways.
- 5) **Lower Cost.** The average cost for mobile flood control barrier systems should be approximately \$30 million per linear mile. These costs include railcars, installation of the railroad tracks, storage, labor, system management and other costs. In addition, the system's mobility provides for shared use of the railcars with other locations, which will dramatically lower the \$30 million system cost.

Need for Engineer Research and Development Center (ERDC) Funding. ERDC is the premier research and development center for the Army Corps of Engineers to conduct test and evaluation of new innovative solutions to mitigate the risks of flooding. This new research project will better protect properties and infrastructure and reduce the impacts of flooding on peoples' lives and livelihoods. Investments in this technology will spur economic development, create jobs and protect the environment and public health.

Report Language.

We recommend the following report language:

The Committee provides not less than \$4,000,000 for U.S. Army Corps of Engineers, Engineer Research and Development Center (ERDC) to conduct prototyping and test and evaluation of innovative mobile flood control barrier systems. The Committee supports efforts to develop the next generation of flood control barriers to improve cost, performance, and overcome the deficiencies of permanent, fixed barriers.

We thank the Committee for your consideration of this testimony.



**Robert Johnson, Senior Vice President
Hannon Armstrong**

**House Appropriations Committee
Subcommittee on Energy and Water Development**

**Fiscal Year 2023 Department of Energy Funding for
the Federal Energy Management Program**

May 9, 2022

As a leading investor in climate solutions, including energy efficiency, renewable energy and other sustainable infrastructure projects, Hannon Armstrong respectfully urges your support for funding the Federal Energy Management Program (“FEMP”), an important program that oversees and facilitates the implementation of Energy Savings Performance Contract (ESPC) and Utility Energy Service Contract (UESC) activities, which are currently contemplated in the Fiscal Year (FY) 2023 Energy and Water Development Appropriations bill. We urge you to support an increase in funding for the FEMP base office up to \$40 million in FY23.¹

Hannon Armstrong (NYSE: HASI) has 41 years of experience in sustainable infrastructure financing. We specialize in providing preferred or senior level capital to established sponsors and high-credit quality obligors, such as U.S. federal, state and local governments, Global 1000 corporations and private developers, for assets that generate long-term, recurring and predictable cash flows.

Our company provides and arranges debt and equity financing for a broad range energy efficiency projects that reduce energy usage or the cost of energy use. We often work with global energy service companies (ESCOs), which design and install improvements to various building components, including HVAC systems, lighting, energy controls, roofs, windows and/or building shells. We originate many of our transactions through programmatic finance relationships with ESCOs as well as renewable energy manufacturers, developers, and operators who own and operate renewable energy projects, including a number of U.S. utility companies.

¹ As noted on p.4 of this testimony, FEMP was funded at an enacted level of \$40M in FY22, but a significant portion of those funds were reserved for the Assisting Federal Facilities with Energy Conservation Technologies program, limiting funding available to the FEMP base office.

In December 2021, we announced that the company has exceeded \$8.8 billion in managed assets and we closed \$1.7 billion in new financing for energy efficiency investments with leading behind-the-meter ESCOs and clean energy developers serving federal, state, local and commercial energy efficiency markets since 2000. Hannon Armstrong's 2021 investments in energy efficiency projects had an average CarbonCount® score of 0.5 metric tons of CO₂ equivalent ("CO₂e") emissions avoided per \$1,000 invested, as well as an average WaterCount™ score of 140 gallons of water consumption avoided annually for every \$1,000 invested.² The estimated 21.6 million tons of CO₂e avoided emissions over 21 years of these energy efficiency investments are equivalent to the amount of CO₂e emissions from 119,586 rail cars of coal, which would stretch from Annapolis, Md. to Kansas City, Mo. when linked end to end. The 36.4 billion gallons of water consumption saved by these investments over the same period could fill three bathtubs for every person in the United States.

The Numerous Benefits of ESPCs

ESPCs are a highly effective public-private partnership model to improve federal building energy efficiency. In this budget-neutral approach, future guaranteed energy savings are used to pay the financing cost of facility upgrades. Federal ESPCs have been one of the most efficient and successful programs reducing energy use and carbon emissions while improving resiliency in the federal built environment. ESPCs allow federal agencies to procure energy savings and facility improvements with no up-front capital costs or special appropriations from Congress. Studies by the Oak Ridge National Laboratory show that, on average, actual cost savings exceed guaranteed savings for federal ESPC projects.³ Projects under the FEMP ESPC program reported achieving 14.155 million MMBtu in energy savings in FY2019, outperforming estimates and providing substantial greenhouse gas emissions reductions.⁴

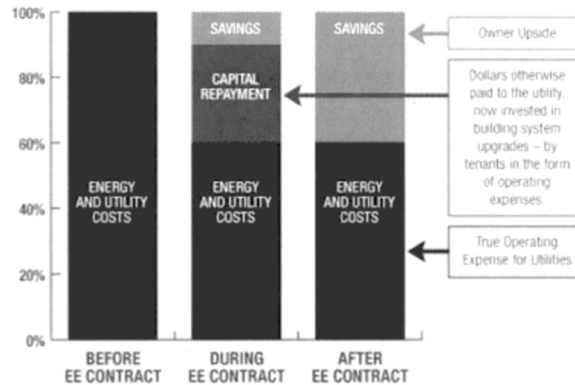
ESPCs and UESCs enable agencies to procure energy services and projects without relying solely on appropriated funds to replace, operate, and maintain aging energy-using

² https://www.hannonarmstrong.com/wp-content/uploads/2022/04/2021-Impact-Report_fnl.pdf

³ <https://info.ornl.gov/sites/publications/Files/Pub150841.pdf>, p.19.

⁴ <https://info.ornl.gov/sites/publications/Files/Pub150841.pdf>, p.9.

equipment. At no added cost to the government, ESPCs and UESCs assist agencies and installations in reducing their energy intensity, reducing greenhouse gas emissions, saving taxpayer dollars and, in many cases, improving mission readiness. These innovative contracts also require the assurance of financial savings.



ESPCs and UESCs have also resulted in the creation of thousands of local and un-exportable jobs. According to the Federal Performance Contracting Coalition (FPCC), for every \$10 million of investment in ESPCs and UESCs an estimated 95 high paying jobs are created. 40 of these jobs are created in the manufacturing sector, 35 jobs are created with subcontractors and installers and finally, 20 of the 95 jobs created are with the ESCOs.

ESPC and UESC contracts are excellent examples of the federal government leveraging private capital. The federal government is our nation's largest energy consumer, with more than 318,000 owned or leased domestic energy-using buildings covering 3 billion square feet of facilities.⁵ Federal agencies have a tremendous opportunity and an obligation to reduce energy and water use in their operations. According to the most current data from the Department of Energy, as of May 9, 2022, there are over \$7 billion in identified energy conservation measures

⁵ <https://www.sustainability.gov/pdfs/federal-sustainability-plan.pdf>, p.28.

for federal agencies, which would save the government over \$670 million a year in energy and water-related costs and provide significant GHG emission reductions from annual energy savings of over 34 million MMBtu.

ESPCs can and should be used to leverage private sector dollars—this allows important and often mission critical projects to be accomplished with far less taxpayer dollars. ESPCs often have a very strong return on investment, as well as a host of additional benefits, including accelerated project timelines, reduced energy infrastructure costs, mission readiness through resiliency, and low-cost financing. The budget-neutrality of ESPCs ensure financial stability in both the short- and long-term. Agencies should prioritize leveraging private sector financing to take full advantage of these numerous benefits, creating jobs while saving taxpayer dollars and improving facility performance.

As the federal program responsible for providing services to enable all agencies to implement successful ESPC and UESC projects, FEMP provides crucial assistance, guidance, and training. **We therefore strongly urge funding of \$40 million for the FEMP base office** so it may continue its vital work to cut energy waste and increase efficiency across the federal government through the public-private partnerships required under ESPCs and UESCs. In FY22, FEMP received a total of \$40 million—but a significant portion of those funds were reserved for the Assisting Federal Facilities with Energy Conservation Technologies (AFFECT) program, limiting funding available to the FEMP base office.⁶

Full funding of \$40 million in FY23 for the FEMP base office would increase support of ESPCs, which are a cost-effective way to make much needed upgrades and increase resiliency of vital federal assets, including military facilities. FEMP's most important effort is the coordinated and defined program management of ESPCs for federal agencies. FEMP staff help agencies use ESPCs in several ways: advising agencies on scoping, procurement, and performance requirements for energy conservation measures (ECMs); helping agencies select third-party ESCOs; finalizing contracting terms and project approval; and monitoring project implementation and performance.

⁶ Under 42 U.S.C. 8256(b)(3), the AFFECT program is required to consider the extent that a proposal leverages financing from other non-Federal sources. ESPCs are also listed as a specific best practice for meeting performance goals for federal buildings under 42 U.S.C. 8253(h)(4).

FEMP is the program manager for the critical ESPC contracting tool used by federal agencies for the implementation of ESPCs – the Department of Energy, Indefinite Delivery Indefinite Quantity, Energy Savings Performance Contract (DOE IDIQ ESPC). These contracts have historically been instrumental in achieving the aforementioned energy and cost savings as well as the job creation outcomes for the nation. Since the inception of the DOE IDIQ ESPCs in 1998, 438 projects have been awarded and approximately \$7.8 billion has been invested in federal energy efficiency and renewable energy improvements. These improvements have resulted in approximately 615 trillion Btu in life cycle energy savings and \$17.7 billion in cumulative energy cost savings for the federal government.⁷

Fiscal year 2020 was the most successful year in the history of the DOE IDIQ ESPC program with a record \$842 million total project investment which will generate \$1.7 billion in energy and water savings for the federal government.⁸ We also urge FEMP to increase its support to military services seeking ESPCs for upgrades to military facilities across the county. One of the main reasons these infrastructure and resiliency upgrades remain uncompleted is lack of appropriated funding. Employing ESPCs to make these much-needed upgrades is a cost-effective way to increase the resiliency of important infrastructure systems and the services they provide to base personnel and operations.

Again, we strongly urge a total of \$40 million in base funding for FEMP, so that the program may continue its vital work as the program manager of ESPCs and the DOE IDIQ ESPC contract in FY2023 and beyond. We thank you for providing this opportunity to submit this testimony and we look forward to working with you.

Contact Information

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⁷ <https://www.energy.gov/eere/femp/awarded-doe-idhq-energy-savings-performance-contract-projects>

⁸ <https://www.energy.gov/eere/femp/awarded-doe-idhq-energy-savings-performance-contract-projects>



**Robin LeBaron, Co-Founder and President
Pearl Certification**

**House Appropriations Committee
Subcommittee on Energy and Water Development**

**Fiscal Year 2023 Department of Energy Funding for
Residential Energy Efficiency Programs**

May 9, 2022

As a national market leader in residential energy efficiency certification, Pearl Certification (“Pearl”) respectfully urges your support, through the Fiscal Year (FY) 2023 Energy and Water Development Appropriations bill, to provide robust funding to advance programs at the Department of Energy (DOE) that invest in residential energy efficiency and whole-house initiatives. The President’s FY 2023 budget request seeks significant investments in vital residential energy efficiency programs. We urge Congress to support these programs and work to ensure that sub accounts within the DOE Office of Energy Efficiency and Renewable Energy are robustly funded so their important work may expand. Specifically, we request Congress provide \$122M in FY23 for the Residential Buildings Integration (RBI) program within the DOE Building Technologies Office.

Pearl provides third-party certification of high-performing homes; homes that are healthy, comfortable, resilient, and energy efficient. Pearl’s certification drives demand for these improvements by making them visible at time of appraisal, sale, and/or refinance, allowing their full value to be captured in the sale price. The Pearl Certification is designed to fill a gap that has existed in the residential marketplace by helping consumers find and sell high-performing homes with an easy-to-use, contractor-friendly certification system that creates an inventory of the

home's energy efficiency, health, comfort, resilience and other "high-performing" assets.¹ Pearl has created networks of elite contractors and real estate brokers: market leaders who provide high quality goods and services.

With paying customers in over thirty states, Pearl has scored over 110,000 homes to date. Pearl is the only market-based firm approved by the Environmental Protection Agency and Department of Energy to administer their Home Performance with ENERGY STAR® program for existing homes, and was accepted into the 2017 National Association of REALTORS® (NAR) prestigious REACH Technology Accelerator. Pearl's recent pilot partnership with NYSERDA positions Pearl's certification system as a voluntary home labeling system which will help states and municipalities meet carbon reduction goals.

Dollar for dollar, investments in energy efficiency create more jobs than investment in the utility sector or fossil-fuels.² As a result, investments in DOE programs that support energy efficiency – like those in the Building Technologies Office - lead to job creation and economic growth. In fact, energy efficiency is the largest employer and fastest growing sector in the energy industry. According to the 2021 Energy Efficiency Jobs in America report released by E4TheFuture, the energy efficiency sector employs over 2.1 million Americans, more than twice as many workers as the entire U.S. fossil fuel industry.³ In the first half of 2021, the industry added more than 8,000 jobs nationwide, bouncing back from massive layoffs stemming from the

¹ The Pearl system provides homeowners, homebuyers, real estate agents, appraisers, and underwriters with different and complementary information that meets their need to understand and value the home's features. New and existing homes can earn a Pearl certification, and the home's record and Pearl score can be updated as further improvements are made. The report that accompanies a Pearl certification includes detailed information on ways that the home's assets impact its comfort, indoor air quality, and energy consumption. Contractors also use the scoring system as an educational tool to help homeowners understand the benefits of high-performing equipment and services.

² ACEEE. N.d. Energy Efficiency and Economic Opportunity. Retrieved from <http://aceee.org/files/pdf/fact-sheet/ee-economic-opportunity.pdf>

³ <https://ee.e4thefuture.org>

COVID-19 pandemic. Still, employment remains well below pre-pandemic total job numbers due to challenges related to workforce, construction, and supply chains.

The residential buildings sector remains a largely untapped resource for carbon reduction goals. Residential buildings account for 21% of total U.S. energy consumption,⁴ consume more electricity than any other sector,⁵ and are the largest contributor to peak demand,⁶ all of which make this sector particularly important from a carbon emissions reduction standpoint. In addition, the occupants of the vast majority of homes in the U.S. experience comfort problems, health issues, and/or high utility bills. The residential sector's energy consumption can be significantly reduced, and other related problems addressed, through single-measure and whole-house upgrades. Supporting these jobs as part of our nation's recovery will be critical.

The Office of Energy Efficiency and Renewable Energy (EERE) at DOE has advanced innovative technology solutions and helped identify the most effective means to increase buildings' energy efficiency in order to reduce carbon emissions through research, development, field validation, deployment, demonstration, consumer education, and technical assistance activities. To ensure that these innovative energy technologies, practices, and information can be fully utilized by American consumers to reduce carbon emissions, Congress should support coordination with the private sector and support demonstration and deployment efforts that integrate and bring these solutions to market. The following activities at DOE deserve the support of the American taxpayer as these programs are proven to provide a significant return on investment and provide economic, health, resiliency, and carbon reduction benefits.

⁴ <https://www.eia.gov/totalenergy/data/monthly/pdf/mer.pdf>

⁵ https://www.eia.gov/electricity/annual/html/epa_01_02.html

⁶ https://www.energy.gov/sites/prod/files/2019/04/f61/bto-geb_overview-4.15.19.pdf

\$122M for the **Residential Buildings Integration (RBI)** program within the Building Technologies Office, which has the capacity to fundamentally transform the performance of homes and greatly improve the energy efficiency in the 115 million existing residential buildings throughout this country. This request matches the President's FY23 budget request, which proposes funding the program at \$122M. As noted, residential buildings account for 21% of total U.S. energy consumption, use more electricity than any other sector, and are therefore an essential (albeit often overlooked) part of the carbon reduction equation. RBI can significantly improve the energy efficiency in the residential sector through its partnerships with the thousands of small businesses in this sector, the construction trades, equipment, smart grid technology and systems suppliers, integrators and state and local governments.

Home Performance with ENERGY STAR, which advances contractor engagement in high efficiency equipment installations, is just one example of a crucial residential program within RBI. To date, over 1 million energy efficiency improvement projects have been completed on existing homes through the Home Performance with ENERGY STAR program.⁷ We recommend that RBI program receive a line item in the budget for at least \$122 million and that the funding be focused on facilitating later-stage research, demonstration, and widespread deployment of technology solutions in new and existing homes, with an emphasis on whole-house energy efficiency retrofits (including outreach, engagement and training to private sector contractors) and continuing efforts to advance grid-interactive residential buildings and smart home technology.

⁷ <https://www.energy.gov/articles/doe-upgrades-one-million-homes-bipartisan-infrastructure-deal-provides-massive-investment>

We encourage the direct engagement with residential contractors and home certification businesses, which are crucial to the success of buildings programs. We also urge continued efforts to address visibility of high performing features in residential buildings as a way to ensure that they are properly valued and to create market incentives to drive additional improvements. RBI deserves the support of the American taxpayer as it is proven to provide a significant return on investment and provide economic, health, resiliency, and carbon reduction benefits. Again, we respectfully urge Congress to fund Residential Buildings Integration at no less than \$122 million.

DOE's residential energy efficiency programs and initiatives are critical to the continued advancement of the energy efficiency industry, which contributes to the country's overall economic growth, energy independence, and international competitiveness, and also represents a significant and largely untapped resource for carbon reduction. We once again urge Congress to support these programs with robust funding for FY23 so they may continue their important work, including continued efforts to address property rating and valuation in buildings. Thank you for the opportunity to submit testimony. We look forward to working with you.

Contact Information

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On behalf of Pearl Certification
lizzie@anndyl.com

FY2023 Mni Wiconi Project Sponsors' Testimony
House Energy and Water Development Appropriations Subcommittee

Mni Wiconi Project (PL 100-516, as amended), testimony submitted by

Oglala Sioux Rural Water Supply System (OSRWSS), Ron Blacksmith, Core System Manager
 Oglala Sioux RWSS (OSRWSS), Chuck Jacobs, Distribution System Director
 Rosebud Sioux Rural Water System (RSRWS), Young Colombe, Manager
 Lower Brule Sioux Rural Water System (LBSRWS), Jim McCauley, Manager

Agency: Bureau of Reclamation

1. FY 2023 OMR Request

The Mni Wiconi Project respectfully requests \$ 33.6 million in appropriations for operation, maintenance and replacement (OMR) activities in FY 2023, including \$1.997 million¹ for the Bureau of Reclamation (BOR). The OMR request includes roughly \$ 6.184 million for necessary crossing, pump station, and SCADA improvements. Additionally, the OSRWSS Core needs \$38 million for South Core Line (Phase V) Replacement (see Section 2). Report language is also requested.

OMR funds will be used as summarized in Table 1 by the Oglala Sioux Rural Water Supply System (OSRWSS), Rosebud Sioux Rural Water System (RSRWS), and Lower Brule Sioux Rural Water System (LBSRWS).

The OSRWSS Core System is the heart of the Mni Wiconi Project and serves the three Indian Reservations and the West River/Lyman-Jones Rural Water System (WRLJ) in 7 off-reservation counties covering southwestern South Dakota with a design capacity of 52,000 people. The Project now serves 41,250. Public Law 100-516, as amended, our authorizing legislation, found that:

...the United States has a trust responsibility to ensure that adequate and safe water supplies are available to meet the economic, environmental, water supply, and public health needs of the Pine Ridge Indian Reservation, Rosebud Indian Reservation and Lower Brule Indian Reservation...

The request as presented in Table 1 will meet the purposes of the Act. Appropriation by Congress of adequate funds will fulfill the fiduciary responsibilities of the United States as articulated in the Act.

The Project has been treating and delivering more water each year from the OSRWSS Water Treatment Plant near Fort Pierre. The population will continue to grow within the service area and will reach the design population late in the next decade. The OMR budget must be adequate to (1) keep pace with the system and its growing population and (2) protect and preserve the \$470 million investment held by the United States in trust for the Tribes and by WRLJ. Funds are needed to properly operate and maintain the infrastructure.

We appreciate the President's focus on improving critical water infrastructure in his requested \$20.021 million for the Mni Wiconi Project. However, more is needed. We remind you of the Project's overall needs, including OMR for community systems when they are transferred into the Project, along with the actual costs of the upgrade work. We also remind you that the oversight budget decreases funds for routine maintenance and extraordinary replacements as referenced in Section 7.

¹ This testimony uses figures provided by Reclamation for its FY21 work plan. We applied 2.3% inflation to those figures.

2. Crossing and Phase V Project/ Existing Community Transfers/ Extraordinary Replacements

Included in Table 1 is roughly \$6.184 million for a crossing, pump station replacement, and SCADA improvements. The Coreline needs \$ \$5.31 million to replace the White River Coreline crossing because there is a leak in the steel pipe under the river that is growing in size. This crossing is essential for the Pine Ridge Reservation and surrounding area south of the White River crossing. It also needs \$808,800 million for the High Service Pump Station VFD Project and \$65,000 for SCADA improvements.

Not included in Table 1 for the OMR request, but a critical need for the OSRWSS Core is the South Core Replacement (Phase V) Project, which will move the lines around the City of Ft. Pierre to address recurrent leaks in the area. Project costs are estimated at \$38 million.

Annual budgeting by the Administration must reflect: (1) increases in water deliveries as project population was added between 2013 and 2015 with no corresponding increase in funding; (2) aging facilities in need of maintenance and replacement (since start of construction in 1994 and through end of construction in FY 2015); and (3) 40 existing communities that must be transferred to the respective Indian rural water systems. It is critical that Project features not fall into disrepair and that sufficient funds are available for the OMR of existing community systems that are scheduled for inclusion in the Project in FY 2023 (or were transferred earlier). Funding is also needed for the actual upgrade work, costs for which total in the tens of millions for the Indian Project Sponsors. We also ask the Subcommittee to be mindful of what BOR calls “extraordinary replacements,” which are actually necessary and routine when pumps, water treatment equipment, pipelines, and other facilities fail and require replacement to continue operations.

The Mni Wiconi Project should be a shiny, new project that stands out as a beacon of modern technology. It provides under-privileged communities with safe and adequate drinking water of the highest quality and to improve the health and well-being of a low-income population, purposes that have been frustrated by inadequate attention to infrastructure maintenance.

It is important to remember that for OMR activities, the Indian projects are left with the appropriated figure minus the approximate \$2 million that BOR takes for oversight. The reduced amount does not account for the needed storage towers, crossing replacement, the community upgrade work, any additional community system transfers, or unexpected extraordinary replacements.

The Promise Zone designation for the Pine Ridge Indian Reservation was announced in April 2015. It focused on developing solutions to infrastructure challenges and the necessary resources to upgrade existing community systems, among other things, to revitalize the region. The request in Table 1 is consistent with the Promise Zone designation (and last Administration's Opportunity Zone designation), and underscores the need for OMR funding for routine maintenance, “extra-ordinary” replacements and existing community systems following transfer.

The need is the same on the Rosebud and Lower Brule Indian Reservations. Adequate funding for all activities, including community water systems that are transferred, is a necessity for the three Indian rural water systems in the Mni Wiconi Project. The following report language is requested (see previous Congresses for similarity):

Mni Wiconi Project, South Dakota.—Reclamation is directed to continue working with the Tribes and relevant Federal agencies, such as the Department of Agriculture, the Environmental Protection Agency, the Bureau of Indian Affairs, the Indian Health Service, and the Department of Housing and Urban Development to coordinate use of all existing

authorities and funding sources to finish needed community system upgrades and connections, as well as any transfers of those systems, as quickly as possible. The Administration is encouraged to include appropriate funding for transferred community systems in future budget requests. (House Report 114-532, FY 2017)

BOR's annual budget requests properly included the transfer of existing community systems and responsibility for operation and maintenance. The budget needs to reflect those transfers:

...The project consists of new systems to be constructed, as well as 40 existing Mni Wiconi community systems. Responsibilities of the Secretary under the Act include the operation and maintenance of existing water systems and appurtenant facilities on the Pine Ridge, Rosebud, and Lower Brule Indian Reservations. (FY 2012-18 Budget Justifications, p. GPR-49)

BOR and other federal agencies are now assisting the Tribes with a pathway for funding transfers and future OMR activities for the 40 existing community systems as they become part of the Project and eligible for funding. It is crucial that these efforts continue. OMR funding is needed for communities that were upgraded and will be transferred (or have been transferred) to the Project.

3. OSRWSS Regional Core Facilities

The staff of the OSRWSS core system includes 17 employees. The staff operates and maintains the 14 million gallon per day regional water treatment plant, 203 miles of main transmission pipeline from 12 inches to 27 inches in diameter, nine major pumping stations (4 Megawatt total capacity), nine reservoirs (4.2 million gallons of capacity) and supervisory control and data acquisition (SCADA) system, necessary to deliver safe and adequate drinking water to the service areas of OSRWSS, RSRWS, LRSRWS and WRLJ. Again, the Core Facilities need a crossing replacement, pump station project and SCADA improvements at a cost of roughly \$6.184 million and total funding at \$11,063,060.00. The OSRWSS Core also needs \$38 million for the South Core Line Replacement (Phase V) Project.

4. OSRWSS Distribution on Pine Ridge Indian Reservation

The OSRWSS Distribution's 33 employees are responsible for maintaining 760 miles of PVC water mains and service lines, 30 high production water wells, 33 booster pumps and treatment stations, 38 water storage reservoirs, and 2,206 metered residences. The water system has been designed and constructed over a 24-year period, and services a total population of 21,510 residents on the Pine Ridge reservation. The construction of the water system is now complete and valued in excess of \$150 million, although 20 additional community system upgrades and transfers are still pending. To operate and maintain our water system has become a challenge. The core system east of Kyle has 4 reservoirs which have a total of 520,000 gallons of storage, this equates to only enough for less than 6 hours of storage in emergency situations. Table 1 shows a proposed 1-million-gallon reservoir to be constructed adjacent to the Sharps East Reservoir that would increase the emergency storage to 18 hours. Table 1 also proposes increasing the existing 8" waterline to a 12" line over the 15 mile stretch from Sharps to the Rockyford Hwy 27/Hwy 2 Intersection. Our older system will also require an estimated \$1 million to replace all the obsolete programmable logic controllers (PLC) in our (44) pump and control stations located throughout the Reservation.

5. Rosebud Sioux Rural Water System (RSRWS)

The staff of RSRWS or Sicangu Mni Wiconi has 14 full-time employees. The staff operates and maintains 425 miles of mainline, 15 major pumping stations, 20 water storage reservoirs, 9 supply wells with two associated chlorination facilities, and SCADA system. A new production well was funded by Indian Health Service for 2023 for RSRWS to increase ground water production and

water supply. The proposal was previously denied by BOR. A current RAX project is proposed to replace a critical asset known as White River PS. Asset management indicated replacement is needed at this site. The RSRWS budget also includes water service contracts with the City of Mission, Tripp County Water Users District (TCWUD) and others in the secondary service area now including the City of White River at a total cost of \$310,500. The newly approved cooperative agreement negotiated in 2022 allows payments to the City of White River tribal residents in the amount of \$60,000. No new monies were appropriated for this expense so the budget was reprogrammed to cover the additional costs. Likewise, in 1995 the citizens of Mission voted to transfer their municipal system to the Mni Wiconi Project and in 2003 a final agreement between the Tribe, the City of Mission, and BOR was consummated and the former municipal system is now held in trust for the Tribe as part of the RSRWS. The inclusion and OMR of the Mission system are authorized by Section 3A (a) (8) of the Mni Wiconi Project Act, as amended. The recent completed community upgrades in Antelope, Butte Creek, Okreek, and Parmelee communities are in the process of being transferred into the RSRWSS to be held in trust. Upcoming Upper Swift Bear and Spring Creek community water system upgrades will be completed by the end of FY 2022. RSRWS is proposing a budget request of \$4,893,071.00 for FY2023 including the RAX request for the White River PS replacement.

6. Lower Brule Rural Water System (LBRWS)

The LBRWS consists of a water treatment plant, six booster stations, three tanks/reservoirs, approximately 75 miles of core pipeline and approximately 300 miles of distribution pipeline. LBRWS has a staff of 12 full-time and two part-time employees to provide the operation and maintenance of these facilities. As shown in Table 1, wages and fringe benefits total \$990,600.

The budget continues to include \$200,000 to upgrade main line meter vaults and \$27,500 to obtain the GPS location of water lines installed by ranchers and to add the lines to the current GIS database. The meter pit upgrades will improve access to the meter vaults and prolong the life of the equipment within the meter pits, while the GPS/GIS information will provide needed information for the operation and maintenance as well as the management of the system.

The Kennebec Booster Station (KBS) was originally designed based on the OST pipeline to Vivian being a 14-inch pipe. However, a significant portion of this line is only a 12-inch pipe. The consequence of this smaller pipe is significantly reduced inlet pressure at the pumps in the KBS. This has led to cavitation occurring in the pumps which has led to numerous pump replacements and complete booster station shutdowns, at times. To solve this issue, LBRWS has begun pumping less water with the KBS and supplying additional water with the LBRWS Water Treatment Plant (WTP). This method of solving the problem is working well, but to fully meet water needs and design standards the size of the West Brule elevated tank needs to be increased. In addition, standby generators for the WTP and booster stations #1 and #2 should be upgraded/replaced. As a result, the budget includes \$1,900,000 to replace the existing West Brule tank with a larger tank and \$700,000 to upgrade/replace generators for the WTP and booster stations. LBRWS will continue to work with the BOR and the other sponsors to prioritize their needs and ensure that their system is operating to the standards that have been established over the past several years.

7. Bureau of Reclamation (BOR)

The BOR's budget is for oversight of operation and maintenance activities for all tribal systems, including the employment of an equivalent 8.0 persons. BOR pays the Western Area Power Administration for Project preference power used by the OSRWSS core system and Rosebud core system. BOR also pays for cathodic protection services for OSRWSS core system, Rosebud, and OSRWSS on-reservation DWM&C systems. BOR costs are expended before funds reach the Project.

TABLE 1

		OSRWSS		RSRWS	LBSRWS	Reclamation	TOTAL
		Coreline	Distribution				
Number of Employees		17	33	14	13	8	85
Labor and Fringe Benefits		\$1,488,956	\$2,115,004	\$847,269	\$990,600	\$1,003,563	\$6,445,392
Labor Overhead Costs		680,304	856,577	587,371	201,400	409,200	2,734,852
Non-Labor Costs							
	Electricity/Natural Gas/Propane	650,000	775,836	230,000	139,800	258,819	2,054,455
	Telephone/Communications	40,000	52,014	23,500	34,900		150,414
	Water Treatment Chemicals/Supplies	500,000	243,132	30,000	105,500		878,632
	Wells, Pumps, Motors & Replacement	400,000	88,511	62,000	104,500		655,011
	Water Testing	140,000	32,782	10,000			182,782
	Vehicle OMR	83,000	299,407	85,200	97,400	18,414	583,421
	Water Service Providers			310,500			310,500
	Travel-Training	60,000	92,882	6,840	33,800	25,575	219,097
	Other	337,000	95,066	200,391	215,600	281,325	1,129,382
	Emergency Leak Repairs	500,000					500,000
Extraordinary Replacements							
	Meter vault, fuel tank & security upgrades				200,000		200,000
	GPS/GIS		100,000		27,500		127,500
	PLC Upgrades (44)		1,000,000				1,000,000
	West Brule Elevated Tank Replacement				1,900,000		1,900,000
	Replace Standby Generator (3)				700,000		700,000
	Increase Pipe Size: 8" to 12' (Sharps to Rockyford - 15 mi)		2,500,000				2,500,000
	Replace Sharps East Reservoir: 1 MG		2,000,000				2,000,000
	White River PS Replacement			2,500,000			2,500,000
Existing Community Transfer							
	Wounded Knee OM&R		25,000				25,000
Priority Community System Upgrades							
	Production Well Replacements		600,000				600,000
Projects							
	White River Bore Crossing	5,310,000					5,310,000
	SCADA Redundancy Telemetry Improvements	65,000					65,000
	High Service Pump Station VFD	808,800					808,800
TOTAL		\$11,063,060	\$10,876,211	\$4,893,071	\$4,751,000	\$1,996,896	\$33,580,238



Written Statement Submitted to the United States House of Representatives Committee on Appropriations; Subcommittee on Energy and Water Development Appropriations;

Testimony on the FY 2023 Budget Request for the Department of Energy Fossil Energy and Carbon Management Program

Submitted by Salvatore A. DellaVilla Jr., Managing Director, Gas Turbine Association

May 27, 2022

The Gas Turbine Association* (GTA) appreciates the opportunity to provide the House Committee on Appropriations with our industry's statement concerning recommended FY23 funding levels for the Department of Energy (DOE) Fossil Energy and Carbon Management R&D Program.

GTA is fully supportive of the decarbonization goals that require significant investment with a relevant technology roadmap. GTA understands the global urgency surrounding Energy Security, Energy Equity, and Environmental Sustainability. Our deeply held belief is centered on the long-term value and benefit that gas turbine technology has made and will continue to make in terms of contributing to a balanced and greener energy solution. Our technology, innovative history, and pathway forward are centered on optimizing output, improving thermal efficiency, and achieving environmental friendliness by reducing GHG emissions (with a goal of achieving a zero-carbon impact). We have worked successfully and have commercialized low emissions products since the 1970's. Our investment path has focused on meeting the need for low-cost energy production and ensuring the operating flexibility that is driven by today's changing market demand – gas turbines complement renewable energy systems to ensure grid stability and resiliency. Our fast start/stop capability is unmatched in the market. Gas turbines will contribute significantly to the decarbonization of the energy market.

The GTA strongly believes that DOE R&D funding should be prioritized to improve the performance and carbon footprint of our nation's installed base of power generation infrastructure. Programs that incorporate diversity, equity, and inclusion elements to promote the representation and participation of different groups in the R&D space are an essential investment in underserved communities.

Representing the largest share of current electrical generation across the country, gas turbines provide critically important electrical generation capacity and dispatchability functions that are key to effective and efficient grid operations. These benefits include:

- Firming capacity enabling broader adoption and interconnection of renewable generation facilities,
- Integrating carbon capture and storage solutions, including both pre- and post-combustion carbon capture technologies,

*GTA Members: Camfil Power Systems, GE Gas Power, Mitsubishi Power, Mitsubishi Power Aero LLC Power Systems Mfg., LLC (PSM), Pratt & Whitney, Pennsylvania State University, Reuter-Stokes Siemens Energy, Solar Turbines, Strategic Power Systems, Turbine Logic, University of Central Florida, UCONN

- Securing energy through reliance on domestic sources of supply to meet our nation's growing energy needs,
- Meeting social justice energy goals through affordable access.

With this country's focus on infrastructural improvements, accelerated electrification and US manufacturing, we are entering a period when the U.S. economy will depend more than ever on advanced gas turbine technologies. Gas turbines are used extensively throughout the U.S. for centralized and distributed electrical power generation, as well as industrial applications. Gas turbines can reduce local air pollution, increase energy resilience, lower utility costs and energy burdens, and create good-paying jobs. By advancing energy security and stability, gas turbines can provide increasing support for equality of opportunity and access to energy.

In addition, investing in improved turbine efficiencies as part of a "performance package" paired with carbon-capture technologies can help to operationalize lowest-cost carbon capture solutions. These solutions would in turn provide important elements enabling environmental justice: delivering resilient, clean, affordable power with advanced decarbonized gas turbine technology. This decarbonization may include the existing installed fleet, a significant portion of which is located within communities identified by the EPA as bearing a disproportionate burden of environmental harms and adverse health outcomes.¹ Additionally, reducing the cost of capture promotes adoption, preserving existing jobs and communities while creating new jobs to modernize these vital assets. The gas turbine community looks forward to developing world class technology to ensure US net-zero generation and lead the world in affordable clean power.

As the US National Academy of Sciences has highlighted in a recent report, *Advanced Technologies for Gas Turbines*: "the gas turbine industry will continue to play a critically important role in the generation of electric power, aircraft propulsion, and the oil and gas industry for decades to come, both domestically and globally." The GTA therefore strongly believes that advancing gas turbine technology should be a priority for the DOE and our nation in order to keep our economy strong, preserve jobs, and maintain this country's preeminent position as a global gas turbine technology provider.

Based on input from the National Academies study and other industry stakeholders, the GTA believes that the core element of these programs should include the following:

1. **Improved Efficiency. Increase combined cycle efficiency to more than 67 percent and simple cycle efficiency to more than 50 percent. This involves both improvements to existing installed power generation facilities as well as development and commercialization of technologies for new generation systems.** Each percentage point increase in efficiency of the U.S. gas turbine power generation fleet results in emissions reductions equivalent to taking 2 million cars off the road, and provides an economic benefit of more than \$7 billion to the U.S. economy.²
2. **Improvements in Fuel Flexibility, enabling gas turbines to operate with high proportions of hydrogen (including pure H₂) and other renewable gas fuels.** This will make it possible to achieve low to no CO₂ emissions within our existing generation

¹United States Environmental Protection Agency, "Power Plants and Neighboring Communities", US EPA Clean Air Markets, Retrieved 05/20/2022, www.epa.gov/airmarkets/power-plants-and-neighboring-communities#graphing

² 10-yr projection with EIA fuel price projections and 1 percentage point efficiency improvement.

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base and power production infrastructure. Gas turbines also have a significant role to play in compression and distribution of hydrogen, leveraging existing infrastructure and supporting upgrading of our nation's gas distribution network.

3. ***Compatibility with Renewable Energy Sources delivering resilient, clean and smart grids.*** This will enhance efficiency and operational flexibility by reducing turbine start up times and improving the ability to accommodate flexible power demands inherent in integrating intermittent power sources into the grid while retaining grid stability and enhancing resilience.
4. ***Cutting-edge Technologies – research and development in areas including combustion; heat transfer; high temperature materials including superalloys, coatings, and ceramics paired with improved manufacturability;***
5. ***Technology Demonstration and Validation Capabilities – support component testing, subscale testing, and full-scale testing in existing fleets***

In recent years the Fossil Energy budget has provided \$27 million/year for gas turbine technology R&D. This was increased to \$35 million in FY 2022, however this level is still only a fraction of the funding authorized for this program by Congress in 2020. In the FY 2021 omnibus appropriations bill, the Energy Policy Act of 2020 established a dedicated line item for advanced gas turbine research and development. To build upon this development, **the GTA urges the House to increase gas turbine R&D funding for the Fossil Energy Research and Development (FER&D): High Efficiency Turbines program to \$50 million to match the level authorized in the Energy Act of 2020.**

With natural gas being key to our energy future, the DOE should invest in gas turbine research as part of a broad portfolio to accelerate decarbonization of our economy and robust U.S. manufacturing and job growth. GTA supports enhanced investment in research and development to minority institutions and HBCUs with programs advancing technology in clean energy, energy efficiency and climate programs geared to underserved communities.

Gas turbines produce less than half the CO₂ per megawatt hour than other fossil fuels, and have the ability to integrate hydrogen and other fuels to achieve low or zero-carbon emissions

- Gas turbines are key to stabilizing the electrical grid.
- Gas turbines, with their rapid response capability, are essential for integrating with intermittent renewable energy sources to provide reliable power at all times.
- Gas turbines are a vital part of the growing distributed generation infrastructure.
- Gas turbines are a major manufacturing export sector for the United States – the U.S. exports more than \$10 billion annually in gas turbine systems and components, and has a trade surplus of \$6 billion per year in turbine technologies.

Gas turbines provide a variety of functions essential to the effective, efficient and sustainable operation of America's energy system and our nation's economy. In addition to the attributes outlined above, gas turbines are the primary source of dispatchable power for microgrids across the country (including hospitals, schools, military installations and the US Capitol complex), and underpin critical infrastructure including our nation's natural gas distribution network. In addition, gas turbines ensure the stability and reliability of our nation's electric grid while supporting hundreds of thousands of high-paying jobs in US manufacturing, engineering, operations, repair and related occupations.

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The Department of Energy's R&D programs play a very important role in supporting the ongoing competitiveness of American manufacturers in the energy industry. Today's most advanced gas turbines have combined cycle efficiency levels exceeding 61%. In both the United States and other countries, there is a focus on technology advancements towards 65%, and long-term 67%+. In particular, China has identified advanced gas turbines as an industrial sector with critical strategic and economic implications and is devoting vast resources to building its gas turbine manufacturing industry as part of the "Made in China 2025" initiative. Maintaining the competitive edge for the U.S. gas turbine industry is critical to sustaining our manufacturing base and its jobs, producing electricity more efficiently, improving air quality, and increasing exports. An enhanced DOE focus on gas turbine technology R&D funding would lead to improved private/public strategic partnerships which are critical to R&D success and rapid market deployment. Examples of technology advancement areas include the development and integrated testing of: fuel-flexible combustors; turbine components; advanced cooling concepts; advanced aerodynamics; improved materials; and more capable coatings.

In short, advancing gas turbine technology is important to the United States. And increased DOE funding in this strategic area can maximize the potential of every R&D dollar.

The GTA respectfully requests \$50 million in FY23 appropriations for the Fossil Energy R&D: High Efficiency Turbines Program targeted to advanced gas turbine R&D to meet critical national goals including decarbonization and environmental justice, fuel efficiency to lower the cost of electricity, high-tech jobs, grid stability and reliability, and fuel flexibility, as well as ensuring the US maintains its preeminent position in the global market.

Gas Turbine Association – Salvatore A. DellaVilla Jr., Managing Director Gas Turbine Association (GTA)

***GTA Members:** Camfil Power Systems, GE Gas Power, Mitsubishi Power, Mitsubishi Power Aero LLC Power Systems Mfg., LLC (PSM), Pratt & Whitney, Pennsylvania State University, Reuter-Stokes Siemens Energy, Solar Turbines, Strategic Power Systems, Turbine Logic, University of Central Florida, UCONN

**Submitted by Shannon Angielski, President, Clean Hydrogen Future Coalition
Written Statement Submitted to the House Committee on Appropriations
Subcommittee on Energy and Water Development
Testimony on the FY 2023 Budget**

Summary of CHFC FY 2023 Recommendation: CHFC recommends \$865,000,000 for clean hydrogen research, development, and deployment (RD&D) activities at the Department of Energy for FY 2023. These recommendations would direct \$745,000,000 to clean hydrogen programs within the Office of Energy Efficiency and Renewable Energy (EERE) and \$120,000,000 to clean hydrogen programs within the Office of Fossil Energy and Carbon Management. In order to effectively utilize these funds, the CHFC recommends that the Department continues its collaboration between the Offices of EERE, Fossil Energy and Carbon Management, Nuclear Energy, and Science.

Background on the Clean Hydrogen Future Coalition: The Clean Hydrogen Future Coalition (CHFC) is a diverse group of stakeholders supporting federal clean hydrogen policies that will stimulate the adoption of clean hydrogen in the U.S. and enable our country to achieve national decarbonization objectives while also increasing U.S. global competitiveness. CHFC members represent a broad spectrum of forward-thinking entities in industries that will play a critical role in the transition to a clean energy economy with a robust role for clean hydrogen.

Importance of Investments in Clean Hydrogen RD&D: With its ability to be used as a fuel source for transportation, as an industrial or chemical feedstock, or to produce and store electricity, clean hydrogen will have a critical role in accelerating decarbonization across all sectors of our economy. For example, clean hydrogen will be necessary to decarbonize heavier modes of transport – including heavy-duty trucking, shipping, and aviation – that are substantially more difficult, if not impossible, to electrify than passenger vehicles. Clean hydrogen can also be used to power certain high-temperature industrial processes that cannot be electrified and for which other mitigation options are limited or unavailable. In the electric power sector, clean hydrogen can be used to produce CO₂ emissions-free electricity and can be used to enable the long-duration energy storage necessary to achieve the net-zero emission electric grid envisioned by the Biden administration.

The CHFC was pleased to see the Department of Energy announce its Hydrogen Earthshot last year, which seeks to reduce the cost of clean hydrogen by 80% to \$1 per 1 kilogram in 1 decade ("1 1 1"). This is a very ambitious goal and will require significant funding for public-private partnerships, as well as additional policy tools like a clean hydrogen production tax credit (PTC).

The Infrastructure Investment and Jobs Act (IIJA) provides significant investments that will promote the development of the U.S. hydrogen economy, including funding for regional hydrogen hubs that will drive capital investments in hydrogen production, transport, distribution, and end-use. The IIJA will also provide critical funding to drive down production costs for electrolytic hydrogen. These programs will be critical to advancing clean hydrogen in the U.S., but robust R&D funding from Congress is still needed to develop new, cost-effective technologies to scale hydrogen infrastructure necessary to reach decarbonization objectives and to fully leverage the investments made by the IIJA.

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FY 2023 Specific Budget Recommendations – Office of Energy Efficiency and Renewable Energy

The CHFC recommends \$745 million for clean hydrogen RD&D activities within EERE. While EERE has traditionally housed the majority of federal RD&D programs related to hydrogen, CHFC encourages the Committee to provide direction to DOE requiring cross-Department collaboration on hydrogen RD&D activities.

Hydrogen and Fuel Cell Technologies: CHFC recommends \$370 million. The CHFC provides the following direction for that funding:

- **Research, Development, and Demonstration:** The CHFC recommends that the Hydrogen and Fuel Cell Technology Program expands its clean hydrogen RD&D activities based on the detailed priorities included in the IIJA in coordination with the Offices of Fossil and Nuclear Energy. The Department should continue research on novel onboard hydrogen tank systems, trailer delivery systems to reduce cost of delivered hydrogen, novel chemical hydrogen carriers, and development of material-based storage and hydrogen storage materials. Funding for electrolyzer development, including high-temperature electrolyzer RD&D activities should be funded with the \$250 million appropriated by the IIJA for these activities. The Department should be directed to continue to advance fuel cell technology development for the transportation fleet, including for long haul and heavy-duty trucking, aviation, rail and maritime applications.
- **Nuclear Demonstration:** CHFC recommends that \$18 million be provided to cost-share the Office of Nuclear Energy hydrogen demonstration project, including for high temperature electrolysis research and development at a national laboratory.
- **H2@scale Front-End Engineering and Design:** The CHFC recommends \$120 million for a front-end engineering and design (FEED) program intended to support the hydrogen hub funding made available in the IIJA. Funding FEED studies will enable industry to more rapidly access private sector capital to invest in projects. The Department should conduct FEED studies on projects that will produce clean hydrogen with low-, net-zero, or net-negative carbon dioxide emissions. Eligible hydrogen technologies should include hydrogen production integrated with wind or solar power generation, autothermal reforming, compact hydrogen generators, biomass combustion to hydrogen, and solid waste and plastics to hydrogen.

Energy Efficiency & Renewable Energy, Industrial Decarbonization: Given the potential of hydrogen technologies to significantly decarbonize applications in the industrial sector, the CHFC recommends \$50 million for an Industrial End Use RD&D program. The Department should utilize these funds for a research, development, and demonstration program focused on technologies that include fuel cells and direct use of hydrogen to replace fossil fuel use, including non-road vehicle applications. The Department should include in its efforts the iron and steel, chemical manufacturing, and other industrial applications requiring high temperatures.

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SuperTruck III Program: CHFC recommends \$300 million for continued funding of the SuperTruck III program to improve the energy and freight efficiency of heavy- and medium-duty long- and regional-haul vehicles. These funds should be used to invest in private sector efforts to build and manufacture new hydrogen fueled truck designs and associated fueling and other infrastructure needed to support the expansion of a hydrogen trucking industry.

Building Technologies, Safety, Codes and Standards: CHFC recommends \$25 million to address significant R&D gaps that are stalling the transition to lower-carbon and zero-carbon fuels in buildings. The CHFC encourages the Department to continue to explore research and development that can advance systems and appliances, driven by delivered fuels including renewable fuels and hydrogen, to meet consumer demand for safe, high efficiency and environmentally friendly products in residential and commercial building applications, increased utilization of renewable fuels and hydrogen, appliance venting, hybrid fuel-fired and electrically-driven systems, and on-site (micro) combined heat and power to include cooling and integration with renewables. The Department should also conduct a study and testing programs to examine the potential for integration of renewable fuels and hydrogen in building applications.

FY 2023 Specific Budget Recommendations – Office of Fossil Energy and Carbon Management

The CHFC recommends \$120 million for the Office of Fossil Energy and Carbon Management to undertake hydrogen-related RD&D activities within the Fossil Energy Research and Development (FE R&D) Program. The FE R&D Program should continue to leverage existing expertise to further develop clean hydrogen production from fossil fuels coupled with carbon capture, utilization, and storage (CCUS) with low- and net-zero CO₂ emissions, or net-negative emissions when fossil fuels are co-fired with sustainable biomass resources. The Office of Fossil Energy and Carbon Management is also uniquely positioned to assess issues related to hydrogen transport and distribution

Natural Gas Technologies: The CHFC recommends \$50 million for the Natural Gas Technologies Program as follows:

- Natural Gas Hydrogen RD&D: CHFC recommends \$50 million for research and development related to the conversion of natural gas into low-carbon, sustainable products, including chemicals and fuels, such as ammonia and hydrogen. As part of this program, the Department should consider how these chemicals and fuels, including hydrogen, can decarbonize industries. The Department should also continue its efforts at the Center for Sustainable Fuels and Chemicals at the National Energy Technology Lab.

CCUS and Power Systems: CHFC recommends \$70 million for hydrogen-related RD&D activities within the CCUS and Power Systems Program as follows:

- Advanced Turbines R&D: CHFC recommends that within available funds for Advanced Energy Systems, \$50 million be made available for Advanced Turbines. The Department

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Testimony on the FY 2023 Budget

should use these funds for a research and development program focused on utilizing clean hydrogen, clean hydrogen-natural gas blends, and ammonia and ammonia-hydrogen blends, to test and validate components and their performance as an integrated system, working cooperatively with industry, universities, and other appropriate parties.

- Solid Oxide Fuel Cells: CHFC recommends \$20 million for the development of next generation SOFC/SOEC technologies to produce power and hydrogen from fossil fuels, biogas, and hydrogen. Recognizing the significant progress made in system integration and lifetime extension for SOFC's from this program, this activity builds on research and development to enable efficient, cost-effective electricity generation and hydrogen production with minimal use of water. This program will result in development of SOFC/SOEC technologies to produce hydrogen and electricity while benefiting from the synergy in the EERE hydrogen and fuel cell programs relative to infrastructure developments and safety of end use. This funding will preserve U.S. leadership in SOFC/SOEC technology, ensure utilization of extensive fossil fuel resources in the U.S., and will result in ultra-high efficiency production of power and hydrogen.

**Submitted by Shannon Angielski, Executive Director, Carbon Utilization Research Council
Written Statement Submitted to the House Subcommittee on Energy and Water Appropriations
Testimony on the FY 2023 Budget, Fossil Energy Research and Development Program**

Summary of CURC FY 2023 Recommendation: The Carbon Utilization Research Council (“CURC”) is an industry coalition focused on technology solutions for the responsible use of our fossil energy resources in a balanced, low carbon generation portfolio¹. CURC recommends \$592,700,000 for the CCUS & Power Systems Program, funded by the Fossil Energy Research and Development (FE R&D) budget.

Benefits of Investment in Carbon Management Technologies: Deployment of carbon management technologies including carbon capture, utilization, and storage (CCUS) will have emissions reductions benefits, contribute to a growing economy, and play a critical role in the ongoing energy transition. In addition to providing low-carbon, dispatchable electricity to load follow intermittent renewables on the electric grid, CCUS provides a mean to reduce emissions from hard-to-decarbonize industrial processes including cement production and steelmaking and can help to create low- and zero- carbon fuels including hydrogen that have a wide variety of applications to decarbonize transportation, hard-to-abate industries, and provide long term, seasonal storage for the grid. International climate authorities like the International Energy Agency have determined that reaching economywide net-zero emissions in any scenario is “virtually impossible” without CCUS.

Federal investment in CCUS research, development, and demonstration (RD&D) will also substantially benefit U.S. economic competitiveness, as the technology will allow us to maintain existing jobs and expertise in incumbent industries in addition to creating new, high-wage jobs in the energy and manufacturing sectors.

CURC-EPRI Roadmap: CURC and the Electric Power Research Institute (EPRI) continuously evaluate technology needs that reflect changing markets and policies that impact fossil fuel use in the electric sector, which are communicated through an *Advanced Technology Roadmap*. The *Roadmap* identifies a suite of CCUS technologies that, if implemented, can deliver low carbon emission, fossil-fueled power plants between 2025-2035 that are cost-competitive with other sources of electricity. Several technologies identified in the *Roadmap* are readying for large-scale pilot testing while others are preparing for commercial demonstration and continued federal support for these activities is required in both cases.

Federal Support of RD&D: The U.S. has been a leader in the development of fossil energy technology with the support of the DOE’s world class CCUS RD&D programs. To date, significant investments and progress in CO₂ storage are well underway, thanks to the CarbonSAFE public-private partnership and the Regional Carbon Sequestration Partnerships. Federal investments have been made to advance CCUS technology deployment, including in FEED studies that are nearing completion that will enable near term deployment of CCUS demonstration projects.

In 2022, Congress provided funding that will support the commercialization of CCUS technologies through the Infrastructure Investment and Jobs Act (P.L. 117-58). The IIJA will enable several CCUS technologies to be piloted and demonstrated at commercial scale, including

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For more information, please visit www.curc.net.

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the needed infrastructure to transport and store large volumes of CO₂. This law includes a total of \$12.1 billion for CCUS technologies. To ensure that the investments made by this law are utilized as effectively as possible, it is crucial that Congress continues its robust support for FE R&D activities.

Additionally, in 2020 Congress recognized the need for expedited development and deployment of these technologies through the enactment of P.L. 116-260, which authorized approximately \$6.7 billion over five years for carbon management RD&D. These authorizations are in alignment with the recommendations of the *CURC-EPRI Roadmap* and will allow DOE to continue to make substantial progress in the development and commercialization of CCUS technologies for applications across sectors, including electric power.

CCUS & Power Systems Program FY 2023 Specific Budget Recommendations

CURC recommends full funding of the authorization levels for Carbon Management activities included in P.L. 116-260. CURC has further comments regarding FY 2023 funding for the CCUS and Power Systems Program:

1. Funding provided by Congress for new activities should not come at the expense of ongoing R&D, for which the Department has already made substantial progress to advance the development of several technologies to commercialization.
2. Funding should continue to be directed to retrofit existing coal- and natural gas-fired electric generating facilities, which will be critical to achieve the Administration's electric sector decarbonization objectives. To that end, federal support is still needed to address underlying gasification technology issues including cost, efficiency improvements, availability improvement, etc.
3. Continued federal investment is needed to develop new large-scale CO₂ storage complexes, as CO₂ storage underpins the entire value proposition of electric power and industrial sector carbon capture as well as carbon dioxide removal technologies including direct air capture.

Carbon Capture: Consistent with the objectives of P.L. 116-260, CURC recommends \$205 million in funding to support R&D, large-scale pilot projects, and carbon capture test centers to develop a variety of transformational carbon capture technologies that can improve the efficiency and lower the cost of carbon capture in both power and industrial sector applications. Funding for carbon capture should also be applied to new transformational technologies that are part of the DOE's Advanced Energy Systems program, as intended by the carbon capture program authorization in the Energy Act of 2020, as those technologies inherently include carbon capture as part of the overall process. CURC supports efforts to evaluate industrial carbon capture and direct air capture (DAC) technologies, but not at the expense of funding for critical existing R&D for post- and pre-combustion capture technologies. Funding for industrial processes and DAC should be additional to funding for power sector applications. CURC recommends full funding for the National Carbon Capture Center (NCCC), which is a critical path for testing and scaling up new technologies.

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Front-End Engineering and Design: CURC recommends \$100 million for a front-end engineering and design (FEED) program on coal, natural gas, and industrial applications of carbon capture technologies, consistent with objectives authorized in P.L. 116-260, which will provide technical and economic data necessary to accelerate CCUS project deployment. Funds within this appropriation should also be utilized to conduct FEED studies of carbon dioxide storage complexes that may be part of the carbon capture projects selected for a DOE award.

Carbon Storage: CURC supports the authorized funding levels of \$129 million for Carbon Storage activities included in P.L. 116-260. CURC notes that direct air capture and other negative emissions technologies will also be dependent on a robust carbon storage industry and recommends a robust program as follows:

- **Regional Carbon Sequestration Partnerships:** CURC recommends not less than \$30,000,000 for the four existing Regional Carbon Sequestration Partnerships (RCSPs). Through more than twenty field projects, the Partnerships have framed the foundation for managing key infrastructure issues related to permitting, pore space ownership, site access, liability, public outreach, and education. They have developed best practices manuals on topics such as site characterization, site construction, operations, monitoring, mitigation, closure, and long-term stewardship, which sets the stage for wide-scale deployment. In addition, the Partnerships continue to draw new financially vested partners to the Program. It is critical that the DOE continue and expand upon the mission of the existing RCSP to continue laying the foundation for infrastructure that encourages full-scale commercial CCUS deployment.
- **CarbonSAFE:** CURC recommends full funding for the CarbonSAFE Phase III projects through to Phase IV and, with remaining funds, DOE should solicit proposals for additional CarbonSAFE projects. CarbonSAFE Phase III effort will seek permits, continue to integrate efforts with regional sources of CO₂, demonstrate technical viability of storage sites and support development of the qualification processes necessary for a site to begin to commercially accept CO₂.
- **CCUS Storage R&D:** CURC recommends continued focus on R&D at all TRL levels to address technical gaps to improve tools for CCUS storage operations, including continued characterization of potential storage opportunities throughout the country, monitoring and modeling technologies, as well as risk assessment and mitigation tools.

Advanced Energy and Hydrogen Systems: CURC recommends \$167 million. P.L. 116-260 includes authorizing language for R&D and large-scale pilot projects for a variety of transformational carbon management technologies, including those covered by the Advanced Energy Systems program that inherently include carbon capture as part of their system process. CURC recommends funding for specific subprogram as follows:

- **Clean Hydrogen with Fossil Fuels and CCS:** CURC recommends \$167 million for RD&D activities related to clean hydrogen production with fossil fuel feedstocks with the objectives of reducing CO₂ and conventional emissions from hydrogen production and electric power generation and lowering the cost of these technologies. The Department should be encouraged to fund RD&D on technologies that have the potential to achieve these objectives, including steam methane reforming (SMR) with carbon capture,

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autothermal reforming (ATR) with carbon capture, sorption enhanced steam methane reforming (SER), natural gas pyrolysis, thermal pyrolysis, catalytic pyrolysis, direct hydrogen production with chemical looping, partial oxidation gas reforming, electric reforming, gasification of solid fuels with biomass co-firing, chemical looping partial oxidation, direct hydrogen production integrated with direct SCO₂ cycle, and any other technologies deemed relevant.

Additional DOE Program Funding: CURC provides the following recommendations within the broader DOE portfolio:

- Hydrogen Storage: Within funding for Natural Gas Technologies, CURC recommends \$22 million to address specific issues related to hydrogen storage, including reservoir modeling of H₂ storage, geochemistry of H₂ storage, integrity and reliability of well materials exposed to H₂, gas removal of impurities (such as natural gas, oil, H₂O, CO₂), and risk assessment.
- Hydrogen for Electricity Generation R&D: Within funding for hydrogen and fuel cell technologies, CURC recommends \$72 million to conduct RD&D activities for electricity generation from hydrogen technologies that will increase the reliability and flexibility of electricity generation technologies. The Department should be encouraged to develop technologies including hydrogen turbines, reciprocating internal combustion engines, solid oxide fuel cells and electrolyzers, on-site storage for those applications, and any other technologies deemed relevant by the Secretary.
- Thermal Energy Storage Systems: CURC recommends \$102.7 million to develop energy storage systems that can be integrated with both new and existing fossil power plants for long duration storage, to allow them to operate at design conditions in off-peak hours and release stored energy during peak hours to complement increased renewable electricity on the grid.



**BUILDING
PERFORMANCE**
ASSOCIATION



Steve Skodak, CEO, Building Performance Association
Stephen Cowell, President, E4TheFuture

and

Larry Zarker, CEO, Building Performance Institute

House Appropriations Committee
Subcommittee on Energy and Water Development

Fiscal Year 2023 Department of Energy Funding for
Residential Energy Efficiency Programs

May 9, 2022

As leaders in the residential energy efficiency industry, the Building Performance Association, E4TheFuture, and the Building Performance Institute respectfully urge your support, through the Fiscal Year (FY) 2023 Energy and Water Development Appropriations bill, to provide robust funding to advance programs at the Department of Energy (DOE) that invest in residential energy efficiency and whole-house initiatives. The President's FY 2023 budget request makes significant investments in the Weatherization Assistance Program (WAP), State Energy Program (SEP), and Residential Buildings Integration (RBI). For the many reasons detailed below, we urge Congress to continue support for these programs and work to ensure that sub accounts within the DOE Office of Energy Efficiency and Renewable Energy are robustly funded—including \$122M for Residential Buildings Integration, \$422.5M for the Weatherization Assistance Program, and \$115M for the State Energy Program—so that their important work may continue and expand. On behalf of our stakeholders and members, we thank you for this opportunity to express our support for these important programs and initiatives that pay for themselves many times over and are a wise and modest investment that help Americans save money, improve energy security, and live and work in safe and comfortable buildings.

The Building Performance Association (BPA) is a membership-driven 501(c)(6) industry association dedicated to advancing the home and building performance industry by delivering improved energy efficiency, health, safety, and environmental performance of buildings through our key stakeholders. With close to 10,000 member companies operating in every state, BPA supports home performance contractors, weatherization agencies and training centers, product manufacturers and distributors, program sponsors and implementers, building scientists, and non-profits focused on residential and commercial energy efficiency.

E4TheFuture is non-profit 501(c)(3) organization which collaborates with industry stakeholders to provide expert policy solutions, education, and advocacy to advance residential clean energy and energy efficiency solutions on the federal, state and local level.

The Building Performance Institute (BPI) is the nation's premier building performance credentialing, quality assurance, and standards setting organization. Approved by the American National Standards Institute, Inc. (ANSI) as an accredited developer of American National Standards and as a certifying body for personnel credentials, BPI develops technical standards and professional certifications that help raise the bar in home performance contracting.

BPA, E4TheFuture, and BPI offer their strong support for DOE's residential efficiency programs and initiatives as critical to the continued growth of the energy efficiency industry across the country. Public programs that support the energy efficiency industry are vital as it continues to develop and, as evidenced by a [grassroots letter from U.S. taxpayers](#)¹ to House and Senate Energy and Water Appropriations subcommittee leadership, there is tremendous public support for these programs. The grassroots letter includes signatures from 473 U.S. taxpayers from 45 states plus the District of Columbia.

Energy efficiency equals jobs. It is the largest employer and fastest growing sector in the energy industry. According to the 2021 *Energy Efficiency Jobs in America*² report released by E4TheFuture, the energy efficiency sector employs over 2.1 million Americans, more than twice as many workers as the entire U.S. fossil fuel industry. In the first half of 2021, the industry added more than 8,000 jobs nationwide, bouncing back from massive layoffs stemming from the COVID-19 pandemic. Still, employment remains well below pre-pandemic total job numbers due to challenges related to workforce, construction, and supply chains. A significant portion of the energy efficiency jobs in the U.S. are in the residential sector, and approximately 54 percent of energy efficiency jobs involve construction and repairs.³ These are the contractors – the “boots on the ground” – installing energy efficiency products and technologies and working to reduce energy waste in U.S. homes and buildings. These local, family-sustaining jobs exist all across the country. In fact, 99.8% of U.S. counties have energy efficiency jobs and more than 280,000 of these jobs are in rural areas.⁴

Dollar for dollar, investments in energy efficiency create more jobs than investment in the utility sector or fossil-fuels,⁵ and investments in DOE programs that support energy efficiency – like Residential Buildings Integration, Weatherization Assistance Program, and State Energy Program – lead to job creation and economic growth. For example, investment in weatherization creates direct jobs in sales and installation and indirect jobs in equipment manufacturing and distribution.

¹ <https://www.building-performance.org/sites/default/files/FY23%20Appropriation%20Sign-On%20Signatures.pdf>

² <https://ee.e4thefuture.org>

³ Ibid.

⁴ Ibid; <https://e2.org/wp-content/uploads/2021/04/E2-2021-Clean-Jobs-America-Report-04-19-2021.pdf>

⁵ ACEEE. N.d. Energy Efficiency and Economic Opportunity. Retrieved from <http://aceee.org/files/pdf/fact-sheet/ee-economic-opportunity.pdf>

In addition to economic and jobs benefits, residential energy efficiency also plays a key role in public health. A DOE report on the Weatherization Assistance Program⁶ found that home improvements focused on energy efficiency can improve indoor air quality, which reduces respiratory illness and sick days, and improves mental alertness and productivity for both children and adults. Two additional reports from 2016 – E4TheFuture’s “Occupant Health Benefits of Residential Energy Efficiency”⁷ and the U.S. Department of Energy’s “HomeRx: The Health Benefits of Home Performance”⁸ – also found that residential energy efficiency upgrades can help to address asthma triggers and other chronic obstructive pulmonary diseases (COPD), leading to reduced healthcare costs. Under the pandemic, these health co-benefits from residential energy efficiency have grown even more vital.

Promoting building efficiency is also vital to achieving carbon reduction goals. Buildings are responsible for 31% of all U.S. greenhouse gas emissions,⁹ and are therefore critical to any emissions reduction strategy. A recent report from ACEEE found that energy efficiency alone can cut energy use and U.S. greenhouse gas emissions in half by 2050, and buildings deliver 33% of the total emissions reductions in the report’s model.¹⁰ The residential buildings sector in particular remains largely untapped. Residential buildings account for 21% of total U.S. energy consumption,¹¹ use more electricity than any other sector,¹² and are the largest contributor to peak demand.¹³ Addressing this sector is essential from a carbon emissions reduction standpoint.

The following programs at the Department of Energy deserve the support of the American taxpayer as these programs are proven to provide a significant return on investment. When funded they will continue to provide energy cost relief to households, support American-based industry and American jobs, ameliorate issues with the aging electrical grid, and support national security goals.

\$122M for the Residential Buildings Integration program within the Building Technologies Office (BTO), which has the capacity to fundamentally transform the performance of homes and greatly improve the energy efficiency in the 115 million existing residential buildings throughout this country. This request matches the President’s FY23 budget request, which proposes funding the program at \$122M. As mentioned above, residential buildings account for 21% of total U.S. energy consumption, use more electricity than any other sector, and are therefore an essential (albeit often overlooked) part of the carbon reduction equation.

⁶ <https://energy.gov/eere/wipo/downloads/weatherization-assistance-program-national-evaluation>

⁷ <https://e4thefuture.org/occupant-health-benefits-of-residential-energy-efficiency/>

⁸ <https://energy.gov/eere/buildings/downloads/home-rx-health-benefits-home-performance-review-current-evidence>

⁹ Total combined emissions from the residential and commercial sectors with electricity-related emissions distributed. <https://www.epa.gov/sites/production/files/2019-04/documents/us-ghg-inventory-2019-main-text.pdf>

¹⁰ <https://aceee.org/sites/default/files/publications/researchreports/u1907.pdf>

¹¹ <https://www.eia.gov/totalenergy/data/monthly/pdf/mer.pdf>

¹² https://www.eia.gov/electricity/annual/html/epa_01_02.html

¹³ https://www.energy.gov/sites/prod/files/2019/04/f61/bto-geb_overview-4.15.19.pdf

RBI can significantly improve the energy efficiency in the residential sector through its partnerships with the thousands of small businesses in this sector, the construction trades, equipment, smart grid technology and systems suppliers, integrators and state and local governments. To date, over 1 million energy efficiency improvement projects have been completed on existing homes through the Home Performance with ENERGY STAR program. We recommend that this program receive a line item in the budget for at least \$122 million and that the funding be focused on facilitating later-stage research, demonstration, and widespread deployment of technology solutions in new and existing homes, with an emphasis on whole-house energy efficiency retrofits (including outreach, engagement and training to private sector contractors) and continuing efforts to advance grid-interactive residential buildings and smart home technology. We encourage the direct engagement with residential contractors and businesses, which are crucial to the success of buildings programs. Again, we respectfully urge Congress to fund Residential Buildings Integration at no less than \$122 million.

\$115M for State Energy Program (SEP). We urge the Committee to provide funding of at least \$115 million for SEP, which provides funding and technical assistance to states, territories, and the District of Columbia to enhance energy security, advance state-led energy initiatives, and maximize the benefits of decreasing energy waste. The President's FY23 budget request proposes an increase to SEP, funding the program at \$70M. Over the past 30 years, SEP has proven to be the critical link in helping states improve efficiency in hospitals and schools, establish business incubators and job training programs, and establish relationships with energy service companies and small businesses to implement cost-effective energy efficiency programs across their state. The Oak Ridge National Laboratory found that every dollar invested in SEP by the federal government yields over \$10 leveraged for energy-related economic development and realizes \$7.22 in energy cost savings for U.S. citizens and businesses – a tremendous economic value. SEP provides extraordinary value and flexibility, which is why governors across the country strongly support continued funding. It is important to note that SEP defers to the governors all decisions on allocating resources provided by DOE to meet their states' priorities such as energy emergency planning and response and energy related economic development.

\$422.5M for Weatherization Assistance Program (WAP). We ask the Committee to provide funding of at least \$422.5 million for WAP, which helps low-income and rural families, seniors, and individuals with disabilities make lasting energy efficiency improvements to their homes. WAP has a proven track record of creating new jobs and contributing to the economy through the program's large supply chain of vendors, suppliers, and manufacturers. Since 1976, WAP has helped make over 7 million homes more efficient, saving the average recipient about \$4,200 over the lifetime of their home. A peer-reviewed study from the Oak Ridge National Laboratory found that the program is cost-effective at even conservative levels of evaluation. Each dollar that goes toward weatherization assistance yields at least \$2.30 in benefits, and by

some estimates as much as \$4.10 to the home and society. The President's FY23 budget request proposes a significant increase to WAP, funding the program at \$502M. We respectfully ask the Committee to continue support for the program in Fiscal Year 2023 in order to assist America's low- and moderate-income citizens.

Aside from the very important programs noted above, BPA, E4TheFuture, and BPI would like to request the Committee support the U.S. Energy and Employment Report (USEER) within the Department of Energy. The annual USEER is an invaluable resource for both employers and policymakers and, in this moment of economic turmoil, supporting the report is particularly critical. In FY22, USEER was funded at \$2 million. Without similar support in FY23, the economic fallout from the pandemic and its impacts on the energy sector nationwide will not be fully recorded, depriving decisionmakers of crucial employment information.

In addition, we respectfully ask the Committee to support existing training programs that fund clean energy and energy efficiency jobs within the Office of Energy Efficiency and Renewable Energy (EERE). These EERE workforce development programs assist and support workers in trades and activities required for the continued growth of the U.S. energy efficiency and clean energy sectors. Seismic shifts in the energy workforce caused by COVID-19 have underlined the continuing need for these programs. We urge the Committee to once again support the USEER, as well as these workforce development programs within EERE.

In conclusion, BPA, E4TheFuture, and BPI offer their strong support for DOE's residential efficiency programs and initiatives, as they are critical to the continued advancement of the energy efficiency industry, which contributes to the country's overall economic growth, energy independence, and international competitiveness, and also represents a significant and largely untapped resource for carbon reduction. Public programs that support the energy efficiency industry are vital as it continues to develop and there is tremendous public support for these programs. The very small investments in the programs discussed above pay for themselves many times over and are a wise and modest investment that help Americans save money, improve energy security, and live and work in safe and comfortable buildings. Again, thank you for providing this opportunity to submit testimony. We look forward to working with you.

Contact Information

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On behalf of the Building Performance Association, E4TheFuture, and the Building Performance Institute

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Official Written Testimony for Fiscal Year 2023: DOE Office of Science

Submitted by: Dr. Susanne C. Brenner, President, SIAM; Dr. Anne Gelb, Vice President for Science Policy, SIAM; Dr. Suzanne L. Weekes, Executive Director, SIAM

**Submitted to: Subcommittee on Energy and Water Development,
Committee on Appropriations, United States House of Representatives
May 27, 2022**

Summary: This written testimony is submitted on behalf of the Society for Industrial and Applied Mathematics (SIAM) to ask you to continue your support of the Department of Energy (DOE) Office of Science with funding of \$8.8 billion in fiscal year (FY) 2023. In particular, we urge you to provide \$378 million for Mathematical, Computational, and Computer Sciences Research in the Advanced Scientific Computing Research (ASCR) program within the Office of Science. We also emphasize the importance of support for graduate students through the Computational Sciences Graduate Fellowship and request that \$21 million be provided in FY 2023.

Written Testimony: On behalf of SIAM, we submit this written testimony for the record to the Subcommittee on Energy and Water Development Appropriations of the United States House of Representatives.

SIAM has approximately 14,000 members, including applied and computational mathematicians, computer scientists, numerical analysts, engineers, statisticians, and mathematics educators. They work in industrial and service organizations, universities, colleges, and government agencies and laboratories all over the world. In addition, SIAM has over 500 institutional members—colleges, universities, corporations, and research organizations. SIAM members come from many different disciplines but have a common interest in applying mathematics in partnership with computational science towards solving real-world problems.

SIAM appreciates your Committee's leadership on and recognition of the critical role of the Department of Energy (DOE) Office of Science and its support for mathematics, science, and engineering in enabling a strong U.S. economy, workforce, and society. DOE was one of the first federal agencies to champion computational science as one of the three pillars of science, along with theory and experiment, and SIAM deeply appreciates and values DOE activities.

SIAM is grateful for the strong funding that the Office of Science received in FY 2022, and we join with the research community to request that you continue this momentum by providing the Office of Science with \$8.8 billion for FY 2023. The requested amount is necessary for ensuring continued support for areas such as mathematics and scientific research to help address national priorities, foster economic growth, and create jobs.

Advanced Scientific Computing Research-- Activities within the Advanced Scientific Computing Research (ASCR) program play a key role in supporting research that begins to fulfill the needs described above. **Within the overall amount for ASCR, we urge you to provide \$378 million for Mathematical, Computational, and Computer Sciences Research in FY 2023,** consistent with the President's FY 2023 budget request. This level of funding is needed to ensure the long-term health and viability of the high-performance computing (HPC) ecosystem that DOE relies on for conducting groundbreaking discovery science while supporting increased investment in priority areas such as quantum computing and artificial intelligence.

Core research activities within ASCR enable the development of critical tools for computational science, modeling, and data analysis that enhance advanced computing capabilities and seed new areas of research with potential for revolutionary advancements. Sustained investment in basic research ultimately enabled the global leadership in HPC that the U.S. currently enjoys. While our strength in HPC is exemplified by the groundbreaking exascale systems currently being assembled, this position is increasingly being challenged by overseas competitors.

We strongly support the Administrations plan's to reorientate ASCR toward longer term research as the Exascale Computing Initiative comes to fruition and funding for the associated Exascale Computing Project continues its planned decline. This shift is underpinned by strategic visioning exercises that have produced several recommendations for reinvigorating ASCR's research agenda. These include a substantial reinvestment in foundational science and increased support for high-risk/high-reward research activities, especially at universities.¹ Such an

¹ Advanced Scientific Computing Advisory Committee (ASCAC), Subcommittee on Exascale Transition, "Transition Report", https://science.osti.gov/-/media/ascr/ascac/pdf/meetings/202004/Transition_Report_202004-ASCAC.pdf?la=en&hash=5164916FE5158EE8919C26804B4CF7F6DDA36E9D

approach will help maintain the long-term viability and vibrancy of the broader HPC research community as ASCR looks toward the post-exascale future.

In addition to the critical role that it already plays in priority areas like artificial intelligence and quantum information science, ASCR's research portfolio will be a critical asset to the Department's efforts to drive innovation in climate and Earth systems predictability and renewable energy. Specifically, research in applied mathematics and computational science will enable new capabilities in environmental sensing and edge computing with applications in Earth systems prediction and climate forecasting. In addition, advancements in modeling, simulation, and optimization can help improve grid reliability and the integration of renewable energy sources into the broader power distribution system.

Supporting the Pipeline of Mathematicians and Scientists-- SIAM is grateful for Congress's strong support of the Computational Sciences Graduate Fellowships (CSGF) in FY 2022, providing a \$5 million increase after it had been flat funded since FY 2015, but **requests that \$21 million be provided for the Computational Science Graduate Fellowship (CSGF) in FY 2023 within the overall amount for research.** Researchers trained in computational science and working in universities, national laboratories, and industry are essential to propel advances in many DOE critical research areas. This program helps ensure the existence of an adequate supply of scientists and engineers with strong computational research experience and close ongoing ties to DOE to meet future national workforce needs.

The increase we are requesting to CSGF reflects the growing need for an expanded workforce in emerging areas of importance to DOE such as artificial intelligence and data science. As international competition in science and engineering intensifies, maintaining U.S. leadership in these areas will increasingly depend on our ability to cultivate a scientific workforce with strong research experience and close ties to DOE. An increase in funding to CSGF would also enable ASCR to address a consistent oversubscription in the program and advance diversity, equity, and inclusion through expanded outreach to minority serving institutions.

In addition to CSGF, this level of funding for the research program would support increases for the Reaching a New Energy Sciences Workforce (RENEW) initiative, started in FY 2022, and support the new Accelerate and FAIR initiatives, which would further broaden and

diversify the applied mathematics and computer science research communities by increasing opportunities for students and institutions that are currently underrepresented.

The Role of Mathematics in Meeting Health, Energy, and Security Challenges-- Support for applied mathematics and computational science is critical to sustaining the nation's global scientific and technological leadership, energy production capabilities, and national security. By exploiting DOE's world class supercomputing capabilities, mathematicians and computational scientists supported by the abovementioned programs pioneer new modeling and simulation techniques that enable substantial breakthroughs in materials synthesis, energy distribution, and human physiology among other complex areas where laboratory experiments or field observations are too costly, time consuming, or simply insufficient. This was demonstrated recently in the midst of the novel coronavirus pandemic. Researchers at Oak Ridge National Laboratory (ORNL) developed a computational model of the novel coronavirus. They then ran the model on ORNL's supercomputer, *Summit*, and were able to identify 77 molecular compounds that could serve as the basis for therapeutic drugs to counter COVID-19.²

Conclusion-- The programs in the Office of Science, particularly those discussed above, are important elements of DOE's efforts to fulfill its mission. They contribute to the goals of dramatically transforming our current capabilities to develop new sources of energy and improve energy efficiency to ensure energy independence and facilitate DOE's effort to increase U.S. competitiveness by training and attracting the best scientific talent into DOE headquarters and laboratories, the American research enterprise, and the clean energy economy.

Thank you again for your ongoing support of the DOE Office of Science. The DOE Office of Science needs sustained annual funding to maintain our competitive edge in science and technology, and therefore we respectfully ask that you continue your support of these critical programs. We appreciate the opportunity to provide testimony to the Committee on behalf of SIAM and look forward to providing any additional information or assistance you may ask of us during the FY 2023 appropriations process.

² https://chemrxiv.org/articles/Repurposing_Therapeutics_for_the_Wuhan_Coronavirus_nCov-2019_Supercomputer-Based_Docking_to_the_Viral_S_Protein_and_Human_ACE2_Interface/11871402/3

**Testimony
Theodore C. Cooke
General Manager
Central Arizona Water Conservation District**

**House Appropriations Committee
Subcommittee on Energy and Water Development**

**Support for \$10.7 million in Fiscal Year 2023 Funding for the Colorado River Basin
Salinity Control Program under
Reclamation's Basinwide Program
May 24, 2022**

On behalf of the Central Arizona Water Conservation District (CAWCD), I encourage you to include an allocation of \$10.7 million for the U.S. Bureau of Reclamation's Salinity Control Basinwide Program for the Colorado River Basin in the Fiscal Year 2023 Energy and Water Development Appropriations bill. Continued funding for the Basinwide Program, which supports salinity control projects, will help protect the water quality of the Colorado River that is used by approximately 40 million people for municipal and industrial purposes and used to irrigate approximately 4 million acres in the United States.

CAWCD manages the Central Arizona Project, a multi-purpose water resource development and management project that delivers Colorado River water into central and southern Arizona. The largest supplier of renewable water in Arizona, CAP delivers up to 1.5 million acre-feet of Arizona's 2.8-million-acre-foot Colorado River entitlement each year to municipal and industrial users, agricultural irrigation districts, and tribal communities.

Our goal at CAP is to provide an affordable, reliable and sustainable supply of Colorado River water to a service area that includes more than 80 percent of Arizona's population. These renewable water supplies are critical to Arizona's economy and to the economies of Native American communities throughout the state. Nearly 90% of economic activity in the State of Arizona occurs within CAP's service area. The canal provides an economic benefit of \$100 billion

annually, accounting for one-third of the entire Arizona gross state product. CAP also helps the State of Arizona meet its water management and regulatory objectives of reducing groundwater use and ensuring availability of groundwater as a supplemental water supply during future droughts. Achieving and maintaining these water management objectives is critical to the long-term sustainability of a state as arid as Arizona.

The Colorado River Basin Salinity Control Program – Its History and Significance

Recognizing the rapidly increasing salinity concentration in the Lower Colorado River and its impact on water users, Arizona joined with the other Colorado River Basin States in 1973 and organized the Colorado River Basin Salinity Control Forum (Forum). In 1974, in coordination with the U.S. Department of the Interior and the U.S. State Department, the Forum worked with Congress in the passage of the Colorado River Basin Salinity Control Act (Act) to offset increased damages caused by continued development and use of the waters of the Colorado River. Title I of the Salinity Control Act deals with the United States' commitment to the quality of water being delivered to Mexico. Title II of the Act deals with improving the quality of the water delivered to the U.S. users.

In the early years of the Program, Reclamation implemented salinity control through large projects that were funded with specific line-item amounts. In 1995, Congress amended the Act and created Reclamation's Basinwide Program. Under this program, Reclamation funds competitive proposals that will decrease the salt load to the Colorado River. Most of the received proposals target off-farm irrigation distribution systems such as canals and laterals. The lining or piping of canals and laterals prevents leakage into the groundwater and the dissolution and transportation of salts to the Colorado River and its tributaries. States provide a 30 percent cost share of the projects

implemented by Reclamation. CAWCD and other key water providers in the United States and Mexico are working to maintain salinity standards.

Negative Impacts of Concentrated Salts

Natural and man-induced salt loading to the Colorado River creates environmental and economic damages. The Environmental Protection Agency (EPA) has identified that more than 60 percent of the salt load of the Colorado River comes from natural sources. With the significant federal ownership in the Basin, most of this comes from federally administered lands. Human activity, principally irrigation, adds to the salt load of the Colorado River. Further, natural and human activities concentrate the dissolved salts in the River.

In 2020 the Bureau of Reclamation (Reclamation) estimated the quantifiable damages to Lower Basin water users due to elevated salinity levels at about \$354 million per year. Modeling by Reclamation indicates that *quantifiable* damages would increase to approximately \$671 million annually by 2040 if the program were not to continue. Damages, by water usage sector, include the following:

- A reduction in the ability to reclaim and reuse water for beneficial uses, including drinking water and irrigation water supplies, due to high salinities in the water delivered to water treatment and reclamation facilities;
- A reduction in the yield of salt sensitive crops and increased water use to meet the leaching requirements in the agricultural sector;
- Increased use of imported water and cost of desalination and brine disposal for recycling water in the municipal sector;

- A reduction in the useful life of galvanized water pipe systems, water heaters, faucets, garbage disposals, clothes washers, and dishwashers, and increased use of bottled water and water softeners in the household sector;
- An increase in the cost of cooling operations and the cost of water softening, and a decrease in equipment service life in the commercial sector;
- An increase in the use of water and the cost of water treatment, and an increase in sewer fees in the industrial sector;
- A decrease in the life of treatment facilities and pipelines in the utility sector; and
- Difficulty in meeting wastewater discharge requirements to comply with National Pollutant Discharge Elimination System permit terms and conditions, and an increase in desalination and brine disposal costs due to accumulation of salts in groundwater basins.

Conclusion

Implementation of salinity control practices through Reclamation's Basinwide Program has proven to be a very cost-effective method of controlling the salinity of the Colorado River. In fact, the salt load of the Colorado River has now been reduced by roughly 1.2 million tons annually. However, shortfalls in recent Basinwide Program funding levels have led to inefficiencies in the implementation of the overall Program. The funding amount requested is required to get the Basinwide Program back on pace with the overall Program implementation needs.

The current drought that has significantly impacted the West affects the amount of and quality of available water, which in turn has the potential to exacerbate the salinity concentration levels. As such, we respectfully request \$10.7 million for the U.S. Bureau of Reclamation's Basinwide Program for the Colorado River Basin in the Fiscal Year 2023 Appropriations bill.

Continuation of adequate funding levels for salinity within this program will prevent further degradation of water quality of the Colorado River and significant increases of economic damages to its nearly 40 million municipal, industrial and irrigation users.

STATEMENT OF
VICTORIA KITCHEYAN
CHAIRWOMAN
WINNEBAGO TRIBE OF NEBRASKA
BEFORE THE
UNITED STATES HOUSE OF REPRESENTATIVES
COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT AND
RELATED AGENCIES
ON
“FISCAL YEAR 2023 BUDGET”
MAY 27, 2022

Chairwoman Kaptur, Ranking Member Simpson and Members of the Committee, thank you for taking public testimony on the President’s Budget for the United States Army Corps of Engineers for Fiscal Year 2023.

My name is Victoria Kitcheyan and I am the Chairwoman of the Winnebago Tribe of Nebraska. I am here to tell our story of forced removals by the United States Army, our reservation that was established by treaty along the banks of the Missouri River and the wrongful condemnation of our lands by the United States Army Corps of Engineers.

Today, the Winnebagos make our home on a reservation along the hills and banks of the Missouri River in Northeastern Nebraska and Northwestern Iowa. We have over 5,000 tribal members and tribal enterprises that employ thousands of employees in Nebraska and Iowa and around the world.

The Winnebago people are originally from present-day Wisconsin. In the mid-1800s, our people were forcibly removed by the United States Army from Wisconsin to Minnesota, Iowa, South Dakota, and finally in 1865 to the Winnebago Indian Reservation in Nebraska and Iowa. Our treaty promised that land was “set apart for the occupation and future home of the Winnebago Indians, **forever**....” I will say that again - Forever.

Unfortunately, the United States did not live up to this promise. After enduring a history of removals, our land, reserved by treaty, was still taken from us as recently as 1970 – 51 years ago. At that time, the U.S. Army Corps began condemning lands along the Missouri River including our lands reserved by treaty which was then broken.

In 1970, the Army Corps improperly and illegally condemned almost 2,000 acres of land of our reservation in Iowa and Nebraska. The Corps filed two condemnation proceedings against the Tribe, one in Iowa and one in Nebraska. Usually, the U.S. would be required to defend the Tribe as part of its trust responsibility for our land, however, because the Army Corps itself is a federal entity, the U.S. could not defend our interests. The Tribe had to defend its own interests in multiple lawsuits, in multiple states, in multiple courts, on extremely short notice and with limited resources. One of our councilmen at the time, Louis “Louie” Larose, tells an account that the Tribe only had one day get a lawyer to defend its lands.

The Tribe lost in both courts. When the Tribe appealed to the federal Court of Appeals, the Tribe prevailed in its lawsuit in Nebraska. The Appeals Court found that the Army Corps did not have Congressional authorization to condemn our Reservation lands.

The Tribe also appealed the Iowa case to the federal Court of Appeals. After years of litigation and appeals, the Eighth Circuit Court of Appeals found that the condemnation was illegal but the Court did not have the authority to order the Army Corps to return the land to the Tribe because of *res judicata*, *the matter was already decided*.

To this day, the Tribe has been fighting for the return of our land. The Tribe exhausted its remedies in the court system. After decades of seeking redress from the U.S. Army Corps and United States Department of the Interior ("Interior"), the Tribe was told to go to Congress. So we did. Legislation was introduced in the U.S. House of Representatives in the 115th and the 116th Congresses but did not pass.

Last year, the Winnebago Land Transfer Act was introduced to right this wrong and restore our homelands. We thank the legislation's bi-partisan sponsor and original co-sponsors, Representative Sharice Davids, a member of our sister tribe, the Ho-Chunk Nation, Representative Darren Soto, and Representative Randy Feenstra, our congressman on the Iowa side of our reservation where these lands are located, and co-sponsor Representative Cindy Axne.

The bill would transfer the Tribe's former reservation lands from the Army Corps back to Interior. The land in this bill is mostly woodland and marsh along the Iowa side of the Missouri River and a recreational, hunting and fishing area. Once restored to us, the Winnebago Wildlife and Parks Department would be responsible for this land just like all of our land. The Department oversees hunting and fishing on 10,000 acres of woodland on the Nebraska side of the Missouri River. Hunters come from all over the country to hunt at Winnebago. The Department has the experience and resources to regulate recreational and conservation activities and ensure Winnebago laws and regulations are enforced. The Department's website provides information on fees and regulations and offers an online process to obtain hunting and fishing licenses. The Tribe would not make much change to the conservation measures in place now by the U.S. Army Corps and the State of Iowa Department of Natural Resources.

On October 5, 2021, the Subcommittee for Indigenous Peoples of the United States held a legislative hearing for the first time on the bill. We are grateful that Interior supports our legislation. Secretary Deb Haaland, the first Native American Secretary, has made restoration of tribal homelands one of her top priorities.

Upon passage of our legislation, we hope that the U.S. Army Corps of Engineers makes the timely and efficient transfer of the land back to us a priority. Only then would the United States right this wrong and ensure that our Tribe's homelands are protected, respected and preserved.

For 50 years, the Winnebago People have waited for their land to be returned. Councilman Larose has served on the Winnebago Tribal Council intermittently for the past 50 years. He was the Tribe's Chairman in the early 1970s when the land at Snyder's Bend was illegally condemned by the United States Army Corps of Engineers. He bore witness to the proceedings where our lands were lost. He sits on the Council today and has fought hard for the return of these lands. During his service to the Tribe, he has not given up on getting our land back and we have never been closer to the moment when our land will finally be returned to the Tribe.

Homelands are the lifeblood of American Indians, Alaska Natives and Native Hawaiians. Our legislation is a prime example and an opportunity for a wrong to be made right. Congress must do everything it can to protect all tribal homelands.

Congressional relief is our last hope. This bill has now been introduced in Congress three times. We hope the third time is a charm. It is time for Congress to act and pass this bill to restore the promises our country made to us in a treaty, the supreme law of the land.

RE: FY23 Written Public Testimony for the Record

Submitted by: Vincent Barnes, SVP Policy, Research, and Analysis, Alliance to Save Energy

Date: May 26, 2022

Prepared for: House Subcommittee on Energy and Water Development and Related Agencies

Subject: Written U.S. Department of Energy (DOE) FY2023 Appropriations

Introduction

The Alliance to Save Energy, a bipartisan, non-profit organization representing a coalition of business, government, environmental, and consumer leaders, respectfully submits testimony, joined by the undersigned organizations to urge your support of robust energy efficiency (EE) investments as identified below in critical programs managed by the U.S. Department of Energy (DOE). Increasing investments in energy efficiency has the ability to deliver significant emissions reductions, grow jobs in the clean energy sector, and provide savings to American consumers. Energy efficiency is a key domestic resource, and is critical to emission reductions and ensuring safe, reliable, and affordable energy for Americans now and in the future. According to the most recent Energy Efficiency Impact Report, “without the energy efficiency investments made since 1980, energy consumption and emissions would have been 60% higher, and consumers would be paying nearly \$800 billion more per year in energy costs.” Furthermore the International Energy Agency (IEA) recently warned that reaching “net zero by 2050 hinges on a global push to increase energy efficiency.” Additionally, as we consider jobs and economic impacts, the U.S. energy efficiency workforce is comprised of over 2.1 million Americans, which is the largest share of the entire U.S. energy sector and is more than all combined jobs in clean and fossil energy generation. These jobs are high-paying and cannot be shipped overseas, ensuring that future generations of Americans can pursue competitive careers in energy efficiency.

The importance of DOE in research, technical assistance, and market integration efforts that have driven gains in energy efficiency cannot be overstated. DOE EE programs provide exceptional value to American consumers and businesses, yielding benefits that far outweigh the relatively nominal outlays appropriated by Congress. According to various impact evaluation studies, DOE's innovation investments have had a benefit-to-cost ratio of 33 to 1 and generated billions of net economic benefits for the country. We respectfully request FY2023 regular appropriations funding for the following DOE programs, as summarized below:

Buildings Technologies (BTO): \$542 million to develop innovative, cost-effective technologies, tools, and solutions that help U.S. homeowners, consumers, and businesses achieve peak energy efficiency performance in their buildings across all sectors of our economy. Within this account, robust funding is needed for:

- **Residential Buildings Integration (RBI):** \$122 million for DOE to collaborate with the residential building industry to improve the energy efficiency of both new and existing homes.
- **Commercial Building Integration (CBI):** \$80 million for the program's research, development, and evaluation to help advance a range of innovative building technologies and solutions, paving the way for high performing buildings that could use between 50% and 70% less energy than typical buildings.
- **Efficiency Standards, Building Codes, and Test Procedures:** \$90 million for equipment and building standards, including \$60 million for appliance standards and \$30 million for the Building Energy Codes Program.

- Emerging Technologies (ET): \$160 million for the program to enable cost-effective, energy-efficient technologies to be developed and introduced into the marketplace.
- Grid-interactive Efficient Buildings (GEB): \$50 million for DOE to ensure that a high level of energy efficiency is a core element of this new crosscutting program and a baseline characteristic for GEBs, which are also connected, smart, and flexible.

Advanced Manufacturing Office (AMO): \$600 million to enable the research, development, demonstration, and deployment of industrial energy efficiency and advanced manufacturing technologies.

- Technical Assistance and Workforce Development:
 - *Energy Management*: \$15 million for efforts to promote Strategic Energy Management practices and \$30 million for the establishment of a program to provide competitive grants to companies for the hiring or designation of plant energy managers.
 - *Save Carbon Now*: \$55 million for the Better Plants program to expand that program to offer comprehensive assessment and engagements to the 1,500 largest greenhouse gas emitting manufacturing facilities.
 - *Existing Low-Carbon Technology*: \$60 million for the establishment of a grant program for manufacturing plants to install underutilized existing low-carbon technologies.
 - *Smart Manufacturing*: \$30 million for support of the development and adoption of smart manufacturing practices directed towards small and medium-sized manufacturers.
- Industrial Efficiency and Decarbonization: \$55 million for industrial process heating decarbonization through the establishment of a research, development, and deployment

effort by AMO to promote the adoption of technologies that can dramatically reduce the GHG emissions from process heating applications.

Office of Clean Energy Demonstrations (OCED): \$200 million for transformative technology adoption through the establishment of a grant program that provides cost-share payments to manufacturing sites that make at-scale implementation of transformative technologies to reduce GHG emissions in intensive manufacturing processes.

Manufacturing and Energy Supply Chains (MESC):

- **Industrial Assessment Centers:** \$30 million for the Industrial Assessment Centers (IAC) program to expand the program to increase the number of university-based centers to 40; to establish satellite centers at community colleges, technical schools, and union training facilities; and to establish an apprenticeship program with matching funding for IAC students at facilities that have received assessments in the recent past to facilitate the implementation of recommendations.
- **Flex Tech:** \$40 million for the establishment of a Flex-Tech program that provides grants to states and tribal governments partnered with educational institutions and trade associations to provide energy and greenhouse gas reduction assessments and loans to implement identified measures at small and medium-sized manufacturers.

Federal Energy Management Program (FEMP): At least \$100 million to provide project and policy expertise to all federal agencies, including not less than \$60 million for the Department to continue its work through the Assisting Federal Facilities with Energy Conservation Technologies (AFFECT) program, and \$2 million for the Performance Based Contract National Resource Initiative.

Weatherization Assistance Program (WAP): At least \$422.5 million is recommended for the Weatherization Assistance Program, including \$375 million for the base Program, \$10 million for training and technical assistance, and \$37.5 million for the Weatherization Readiness Fund.

State Energy Program (SEP): At least \$115 million is recommended for State Energy Program grants, including \$25 million to be used for technical assistance on energy and related air quality in schools. At least \$90 million of the SEP funds to be utilized for direct formula grants to the states.

U.S. Energy & Employment Report (USEER): \$2 million for the Office of Policy to complete the annual U.S. energy employment report that includes a comprehensive statistical survey to collect data, publish data, and provide a summary report.

Energy Information Administration: \$144 million to continue important data collection, analysis, and reporting activities on energy use and consumption, including the Commercial Buildings Energy Consumption Survey and the Residential Buildings Energy Consumption Survey.

We stand ready to work with Congress, the White House, and federal agencies to identify ways the U.S. can improve the affordability and access of energy-efficient technologies, unlock utility savings for consumers, reduce energy-related carbon emissions, and improve public health. We appreciate your consideration of our requests.

Sincerely,

Alliance to Save Energy, Advanced Energy Economy (AEE), American Council for an Energy-Efficient Economy (ACEEE), Building Performance Association (BPA), Business Council for Sustainable Energy (BCSE), E4TheFuture, Environmental and Energy Study Institute (EESI), Federal Performance Contracting Coalition (FPCC), Institute for Market Transformation (IMT), International Code Council (ICC), National Association for State Community Services Programs (NASCSP), National Association of Energy Service Companies (NAESCO), National Association of State Energy Officials (NASEO), Natural Resources Defense Council (NRDC), Southeast Energy Efficiency Alliance (SEEA), U.S. Green Building Council (USGBC)

WITNESSES

	Page
Adams, Marvin	185
Allen, Hon. R. W	271
Angielski, Shannon	493
Barnes, Vincent	519
Berginnis, Chad	366
Bergman, Hon. Jack	304
Bindner, Michael	461
Blacksmith, Ron	484
Bradley, David	401
Brenner, Dr. S. C	506
Caldwell, Admiral James “Frank”	185
Casten, Hon. Sean	307
Cloud, Hon. Michael	259
Cohen, Hon. Steve	311
Colombe, Young	484
Connor, M. L	1
Cooke, T. C	510
Crawford, Hon. E. A. “Rick”	313
Cullen, Genevieve	414
DeLaine, P. M., Jr	469
DellaVilla, S. A., Jr	489
Desiderio, Dante	396
Escobar, Hon. Veronica	315
Farrell, Dane	391
Gelb, Dr. Anne	506
Granholm, Hon. J. M	77
Hagekhalil, Adel	330
Hague, Jimmy	433
Hamman, M. A	465
Harris, C. S	371
Hasencamp, Bill	352
Hinderstein, Corey	185
Hruby, Jill	185
Jacobs, Chuck	484
Jacobson, Lisa	448
Johnson, Robert	474
Kitcheyan, Victoria	515
Korsnick, Maria	456
Kuo, Ellen	411
LeBaron, Robin	479
Mast, Hon. Brian	317
McCauley, Jim	484
McMurrian, Katrina	438

	Page
Mitchell, Casey	361
Mrvan, Hon. F. J	263
Ogsbury, J. D	424
Palumbo, David	1
Piercy, C. H	376
Porter, Hon. Katie	276
Powers, Dan	386
Premathilake, Kumi	443
Ratner, Alexander	334
Segal, Allen	339
Sessions, Hon. Pete	319
Skodak, Steve	501
Snell, April	344
Spellmon, Lieutenant General S. A	1
Stansbury, Hon. M. A	287
Stanton, Hon. Greg	294
Taylor, Crispin	381
Terry, David	406
Titus, Hon. Dina	321
Trujillo, Tanya	1
Van Drew, Hon. Jefferson	281
Weber, Hon. R. K	323
Weekes, Dr. S. L	506
White, William "Ike"	185
Whitehead, H. D., Jr	419
Wierzbicki, Jeannette	429
Wolf, Malcolm	451
Zarker, Larry	501