

[H.A.S.C. No. 118-8]

HEARING
ON
NATIONAL DEFENSE AUTHORIZATION ACT
FOR FISCAL YEAR 2024
AND
OVERSIGHT OF PREVIOUSLY AUTHORIZED
PROGRAMS
BEFORE THE
COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES
ONE HUNDRED EIGHTEENTH CONGRESS
FIRST SESSION
SUBCOMMITTEE ON READINESS HEARING
ON
**ENERGY, INSTALLATIONS, AND
ENVIRONMENT PROGRAM UPDATE**

HEARING HELD
FEBRUARY 28, 2023



U.S. GOVERNMENT PUBLISHING OFFICE

52-320

WASHINGTON : 2024

SUBCOMMITTEE ON READINESS

MICHAEL WALTZ, Florida, *Chairman*

JOE WILSON, South Carolina

AUSTIN SCOTT, Georgia

MIKE JOHNSON, Louisiana

CARLOS A. GIMENEZ, Florida

BRAD FINSTAD, Minnesota

DALE W. STRONG, Alabama

JENNIFER A. KIGGANS, Virginia

JAMES C. MOYLAN, Guam

JOHN GARAMENDI, California

MIKIE SHERRILL, New Jersey

VERONICA ESCOBAR, Texas

MARILYN STRICKLAND, Washington

GABE VASQUEZ, New Mexico

JILL N. TOKUDA, Hawaii

DONALD G. DAVIS, North Carolina

MARC VEASEY, Texas

PATRICK NEVINS, *Professional Staff Member*

JEANINE WOMBLE, *Professional Staff Member*

ETHAN PELISSIER, *Research Assistant*

CONTENTS

	Page
STATEMENTS PRESENTED BY MEMBERS OF CONGRESS	
Garamendi, Hon. John, a Representative from California, Ranking Member, Subcommittee on Readiness	3
Waltz, Hon. Michael, a Representative from Florida, Chairman, Subcommittee on Readiness	1
WITNESSES	
Berger, Hon. Meredith A., Assistant Secretary of the Navy for Energy, Instal- lations, and Environment	7
Jacobson, Hon. Rachel, Assistant Secretary of the Army for Installations, Energy, and Environment	9
Oshiba, Edwin H., Acting Assistant Secretary of the Air Force for Energy, Installations, and Environment	10
Owens, Hon. Brendan, Assistant Secretary of Defense for Energy, Installa- tions, and Environment	5
APPENDIX	
PREPARED STATEMENTS:	
Berger, Hon. Meredith A.	61
Garamendi, Hon. John	39
Jacobson, Hon. Rachel	78
Oshiba, Edwin H.	99
Owens, Hon. Brendan	41
DOCUMENTS SUBMITTED FOR THE RECORD:	
[There were no Documents submitted.]	
WITNESS RESPONSES TO QUESTIONS ASKED DURING THE HEARING:	
Mr. Davis	128
Mr. Garamendi	127
Mr. Moylan	128
Mr. Scott	127
Ms. Sherrill	128
Mr. Vasquez	128
Mr. Waltz	127
QUESTIONS SUBMITTED BY MEMBERS POST HEARING:	
Ms. Escobar	148
Mr. Moylan	149
Mr. Scott	136
Ms. Sherrill	139
Mr. Waltz	133

ENERGY, INSTALLATIONS, AND ENVIRONMENT PROGRAM UPDATE

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON READINESS,
Washington, DC, Tuesday, February 28, 2023.

The subcommittee met, pursuant to call, at 2:31 p.m., in room 2212, Rayburn House Office Building, Hon. Michael Waltz (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. MICHAEL WALTZ, A REPRESENTATIVE FROM FLORIDA, CHAIRMAN, SUBCOMMITTEE ON READINESS

Mr. WALTZ. All right, ladies and gentlemen.

Calling to order the first hearing of the Readiness Subcommittee on “Energy, Installations, and Environment Program Update,” first hearing of the 118th Congress.

I would like to welcome the members of the Readiness Subcommittee for our first official hearing. I am deeply honored to serve as chairman of this impactful subcommittee and lead its crucial work. I am very pleased, again, to work with Mr. Garamendi as the subcommittee ranking member, and was honored to work with him as the ranking member as chairman to show the bipartisan—when he was chairman to show the bipartisanship of these issues and supporting our warfighters. I have thoroughly enjoyed working with him over the last year and appreciative of the great work conducted during his time as committee chairman.

Thank you to our witnesses for your time and participation in today’s hearing to discuss military construction, environmental programs, energy programs, as well as base and facility accounts.

And, you know, I just want to say right out the gate, it has become a trend, and I wish we could be having this conversation after the release of the President’s budget. There is no doubt plenty of issues we can discuss even without the budget figures. I welcome a continued dialogue on these matters as we do see the budget release and as we work through this year’s NDAA [National Defense Authorization Act] process.

The Armed Services Committee will deliberate a lot this Congress on the present and future capabilities needed for the great power competition that we face, in line with the national defense strategy, and a potential Taiwan contingency. As we discuss these capabilities, we must also recognize the need for investment in new infrastructure, as well as the maintenance for our existing infrastructure.

Unfortunately, maintenance of existing facilities has been chronically neglected, often to pay for other priorities, and this lack of investment in aging and failing infrastructure has resulted in negative impacts to readiness and retention, as well as inefficient facilities that don't adequately support our intended missions. I think we can do better, and I think our warfighters deserve better.

I look forward to discussing the path forward with new military construction and how the services prioritize sustaining existing infrastructure with the understanding that we must get this mix right to both support our platforms and our service members.

Any MILCON [military construction] and facility sustainment effort must also prepare our military installations at home and abroad for future challenges with better planning that focuses on resilient infrastructure investments. We have made progress to this end by requiring master plans with previous committee work that we intend to continue, and these master plans consider these risks. The services have begun to submit these master plans for their two most at-risk installations after being required to do it in the fiscal year 2022 NDAA. However, we must do more to shape the best posture that we can for the future.

Nowhere else is the issue of aging infrastructure more evident than our shipyards. The recent operational impacts to dry docks at the Puget Sound Naval Shipyard due to seismic resiliency issues is concerning. I am sure it concerns everyone here.

I would like to hear from our witnesses today what is being done to remedy this problem, mitigate risk to readiness, and use this as an impetus to look across our shipyards and invest in critical updates to ensure their long-term viability.

Our installations also remain largely dependent on commercial electrical grids—I know a lot of work has been done in this space, and I look forward to hearing it—that are vulnerable to any disruptions they suffer. To protect our mission capability, I believe we must continue to pursue solutions like islanding capabilities and generation from microreactors.

On the operational side, I am very concerned the Department [of Defense] is not as far along as we should be given the threats on the horizon. Our ability to supply energy forward, to sustain operations forward in contested environments in a way that we have not had to do in recent decades it is just critical with today's threat environment.

Contested and challenged environments are the new normal, and we need to posture ourselves accordingly. Furthermore, we must [ensure] our installations are free of dependency on energy supplied by our adversaries. It sounds like an obvious statement, but I think we are in a position where we need to do more work there.

Recent NDAA's have highlighted the threat posed by our reliance on Russian energy at our European Command installations. The Department has begun this work. I look forward to hearing where we are with it, and it is paramount we develop and adhere to transition plans at every installation under EUCOM [U.S. European Command].

Taking care of our military members is the utmost responsibility of all of us here, and our Defense Department leaders continuously tout people-first strategies, ensuring our service members are the

priority. But I remain skeptical, frankly, of this being put into practice when we look at the status of some of our housing and our barracks. We must provide safe barracks, housing, and infrastructure.

I know Ranking Member Garamendi shares in this effort and has done a lot of work to that end.

Recent NDAA's have authorized historic levels of spending for the cleanup of PFAS [per- and polyfluoroalkyl substances] contaminated military installations and surrounding areas. We hope to see that momentum continued.

Furthermore, in last year's NDAA, we authorized \$1 billion for the Red Hill Recovery Fund. I think you are seeing a theme here that we are going to continue the work and try not to reinvent the wheel of previous years despite a switch in the majority.

We need to also prioritize making our strategic stockpiles whole, as well as reducing our reliance of adversarial nations for our critical minerals and for our supplies. The DLA has identified—the Defense Logistics Agency—has identified 14 critical defense materials that are 100 percent foreign-sourced. That is unacceptable in my view.

We have insufficient national defense stockpile reserves to support essential defense requirements. Of those 14 materials, 11 are sourced from China. Again, unacceptable. This is an unacceptable threat to our national security. I look forward to working with the subcommittee on further solutions in addition to the critical mineral stockpile we have authorized in previous NDAA's.

This administration's focus on climate, as a national security priority, oftentimes I find that concerning, just to be completely candid. I want to dig into the Department of the Army's strategy to electrify our tanks, fighting vehicles, and others given the supply chain concerns and other pieces involved.

At the end of the day, I think our priority should be on developing and implementing the mostly lethal capabilities for deterrence and to counter China, and if that so happens to have green effects, I think that is completely appropriate.

Finally, the ongoing war in Ukraine and ever-growing aggressive China are a constant reminder of the importance of this work. Smart investments must be made now.

I thank you again, once again, for our witnesses for being here today. I look forward to your testimony.

And with that, I turn it over to Ranking Member Garamendi.

STATEMENT OF HON. JOHN GARAMENDI, A REPRESENTATIVE FROM CALIFORNIA, RANKING MEMBER, SUBCOMMITTEE ON READINESS

Mr. GARAMENDI. Thank you very much, Mr. Waltz.

I have got all of this written speech that I am going to give, but I like what you said. I like your priorities. I like what you have laid out. And whether we are going to put a hybrid Abrams tank out on the field or not remains to be seen. But everything that you have talked about, most of what you have talked about is what we have done over the last 4 years, and we did that in a bipartisan way; and we will continue to support you and the majority as you go about the agenda that you have laid out here.

If I don't read this, you know, my staff is going to be really upset because they spent a lot of time writing this, but I am going to try to really shorten it.

We have been with these witnesses before, as you said, Mr. Waltz, and we've talked about these issues. We haven't talked about them to the end of the process because the process doesn't end. There is always more to do, and so, we are going to be working diligently together on the Department's infrastructure, all of the bases, all of the shipyards, all of the dry docks, all of those things. They have to be dealt with, and they have to be brought up to modern standards and actually beyond modern standards.

We have seen that the general attitude has been to accept risk. It turns out that the acceptance of risk is really risky and leads to a significant degradation of the readiness of the troops, the readiness of the ships, the readiness of the airplanes. Take, I don't know, take the shipyards. Take the F-35. Lots of examples out there.

So we need to really be very diligent, very diligent in pressing hard to make sure that the bright, shiny things that everybody would like to have and certainly the defense industrial base would love to make do not result in a degradation of the essential infrastructure upon which the entire military system relies.

I can give examples here. We have accepted the risk of Tyndall Air Force Base being built in, I don't know, maybe a foot above sea level. Florida, I believe, Mr. Waltz.

Mr. WALTZ. Great State.

Mr. GARAMENDI. It was wiped out, literally wiped out, but yet, we accepted the risk of rebuilding at the same location to the tune of several billion dollars. And I hope I am not around for the next earthquake that goes—the next hurricane that goes through that, but it may be the same result in the last earthquake—the last hurricane.

My mind has shifted to China Lake and to earthquakes, which is California, and a few other places on the west coast.

And you mentioned, Mr. Waltz, the question of the dry docks. Absolutely critical dry docks. They are not going to be able to be used for some time. How long have we accepted? How long have we known the risk, the earthquake risk there? And how long have we accepted it, until it got to the point where, oh, my goodness, it has to be dealt with now or else.

And so, we can go on and on about those risks.

Thank you for mentioning housing, barracks, and the like. This committee, even before I became chairman, had dealt with the housing issue, and I suspect four or five chairmanships beyond you and I will continue to deal with it because it has to be watched all the time. Backsliding is always there, and this is for the troops.

And the barracks, you mentioned that. And absolutely true; we have to deal with that.

There is an issue that we have not dealt with in the past, and I want to put it on the table for us to think about. We, this committee, had not really dealt with it, and that is the issue of encroachment. Who is buying land and putting up projects around our military bases? What is that and what is the threat of that encroachment?

It may be a wind turbine that somehow screws up the radar at an Air Force base. Or in the case of Travis Air Force Base, what is this LLC that has literally purchased every piece of property around the base and 14,000 acres beyond that? Who are they? What are they?

And it turns out that I think the base commanders had not been charged with the responsibility of watching carefully what is going on outside the base. We need to pay attention to that.

We've had this issue in North Dakota, an issue that ultimately resulted in a Chinese company that wanted to buy the land saying, No, you can't, because of the potential security risks associated with it. I want us to pay more attention to it because it is down home, my district. And, perhaps, in other Members' districts also.

We have got a lot of work to do. You talked about the energy issues. There is enormous potential for divisiveness on energy, but if we look at it in the way of cost savings, readiness, availability—your mention of microgrids, Mr. Chairman; that is a piece of that puzzle. There are—excuse me, small reactors and microgrids. All of these things are out there.

Again, this comes back to resiliency. The great deep freeze in Texas. There are some Texas folks around here. What if we had a different strategy?

We can go on and on. With your permission, I would like this wonderful speech that my staff put together to be in the record.

Mr. WALTZ. Without objection.

[The prepared statement of Mr. Garamendi can be found in the Appendix on page 39.]

Mr. GARAMENDI. I yield.

Mr. WALTZ. Thank you, Mr. Garamendi.

Again, welcome to our witnesses. Brief introductions. The Honorable Brendan Owens, Assistant Secretary of Defense for Energy, Installations, and Environment.

We have the Honorable Rachel Jacobson, Assistant Secretary of the Army—Go Army—Installations, Energy, and Environment.

The Honorable Meredith Berger. Good to see you again. Assistant Secretary of the Navy for Energy, Installations, and Environment.

And Mr. Edwin Oshiba, Assistant Secretary of the Air Force for Energy, Installations, and Environment.

Over to you, Mr. Owens, for your opening statement.

STATEMENT OF HON. BRENDAN OWENS, ASSISTANT SECRETARY OF DEFENSE FOR ENERGY, INSTALLATIONS, AND ENVIRONMENT

Mr. OWENS. Thank you, Chairman Waltz, Ranking Member Garamendi, distinguished members of the subcommittee. On behalf of myself and my military department colleagues, thank you for the opportunity to discuss the Department's energy, installation, and environment programs.

This is my first time testifying before this subcommittee. I am 30 days into the job. And I look forward to working with you in the coming months to continue aligning our priorities and resources to support the National Defense Strategy [NDS].

The 2022 NDS is clear. We are operating in an increasingly complex global threat environment characterized by significant geopolitical, technological, economic, and environmental change. The People's Republic of China remains the Department's pacing challenge with its increasingly aggressive efforts to undermine U.S. alliances and security partnerships in the Indo-Pacific.

We also face threats from actors like Russia, North Korea, Iran, as well as climate change and other transboundary challenges. Together, these threats not only pressure the joint force's power projection and maneuver capabilities but also put the safety and security of the homeland at risk.

Countering these threats requires a resilient joint force and defense ecosystem that can operate in a contested environment at home and abroad. As such, we are ensuring that our installations and infrastructure are resilient to a wide range of challenges by implementing policy updates; innovation in how we plan, design, and build; and deployment of technology to counter the diversifying threats we face.

In the Indo-Pacific specifically, there are two key priorities that will be critical to the success of this effort: retaining vital mission capabilities in the State of Hawaii, and ensuring the critical military construction efforts in Guam and the Commonwealth of the Northern Mariana Islands [CNMI] remain on track by extending the exemption from the H-2B visa temporary need requirement through 2029.

We look forward to partnering with Congress, the State of Hawaii, Guam, the CNMI, and other Federal stakeholders in doing the work that is necessary to ensure that these priorities can be addressed.

More broadly, we are making significant investments in both installation and operational energy to enhance resilience and reduce demand to improve joint lethality, support distributed operations, and reduce sustainment risks in contested environments.

We are improving our approach to facility management to increase the efficacy of our sustainment, restoration and modernization investments, and to optimize the condition of our facilities. These efforts will enhance our facilities' direct mission support capabilities, and they will also enhance the health, well-being, and readiness of our service members and their families.

Our installations, however, do not exist in a vacuum, and we recognize that the Department cannot achieve these goals on its own. Defense communities and host nations provide indispensable support to the mission. Acknowledging this interconnectedness, it is imperative that we be good stewards of the environment in addition to being conscientious and committed partners with the communities that support our installations, our service members, and their families.

To that end, we remain committed to maintaining our robust environmental cleanup program, improving the safety and efficiency of our facilities, and improving the quality of life for our military personnel by ensuring access to safe, quality, and affordable housing.

The Department is committed to working in close coordination with the U.S. interagency, State, local, Tribal, territorial and in-

dustry partners, as well as our international allies to achieve these goals.

I would like to highlight specifically the progress we have made to develop and demonstrate PFAS-free alternatives for aqueous film forming foam. Congressional authorizations and appropriations made it possible for the Department to continue its ongoing work to evaluate flourine-free alternatives.

Based on the hard work of numerous dedicated DOD employees and industry partners, the Navy published a new military spec for replacement foams in January. Several flourine-free foams are currently proceeding through the military specification qualification process, and the Department plans to begin the transition to the use of these products this summer.

So while we implement new technology to avert future risk, we continue our cleanup efforts intended to safeguard the health and well-being of our people. Nothing is more important than our people: soldiers, sailors, airmen, Marines, guardians, and their families. The investments we make to improve the built and natural environments where they live and work are investments that pay off by improving their health and well-being.

We appreciate Congress' and this subcommittee's continued support for these efforts, and we look forward to your questions.

[The prepared statement of Mr. Owens can be found in the Appendix on page 41.]

Mr. WALTZ. Thank you, Mr. Owens.

Ms. Berger.

STATEMENT OF HON. MEREDITH A. BERGER, ASSISTANT SECRETARY OF THE NAVY FOR ENERGY, INSTALLATIONS, AND ENVIRONMENT

Ms. BERGER. Chairman Waltz, Ranking Member Garamendi, and distinguished members of the subcommittee, thank you for the opportunity to testify today.

The Department of the Navy's Energy, Installation, and Environment portfolio is foundational to making sure that our sailors, Marines, and civilians are ready, able to do all that our Nation asks them to do.

I started my last statement before this committee with an ask. Today I start with a thank you, for the inclusion of the Fallon Range Training Complex modernization in this year's NDAA. This is an example of the way things should be. We worked with Congress, Tribal, local, State, and Federal partners to ensure we protected culture, the environment, and the economy to guarantee the readiness for the fleet, making sure that they can train like they fight.

At that time, we were also at the beginning of responding to a terrible event, the contamination of drinking water from the fuel spill at Red Hill. I am proud to report progress, and also to commit to the work that is still before us. Today, the water is safe to drink, and the Navy is conducting long-term monitoring to ensure there is no fuel contamination.

Secretary of Defense Austin has directed Joint Task Force Red Hill to safely and expeditiously defuel Red Hill, and Navy to the permanent closure of Red Hill, and we are working on these monu-

mental tasks together. With every action we take, we are prioritizing the health and safety of the people, environment, and communities in Oahu.

We recognize that earning trust takes hard work and commitment and relies on all sides. We are working every day to keep up our end of the bargain, and we are grateful to the partnership of the people of Hawaii.

Secretary Del Toro has identified three enduring principles that guide the work of the Department of the Navy: strengthen our maritime dominance, our people, and our partnerships.

In my role, I implement Secretary Del Toro's guidance by focusing on three cross-cutting areas: communities, critical infrastructure, and climate action. Communities are where our people come together, the districts you represent, the towns where our installations are, and the environment and economies that surround them that enable our sailors and Marines to live, train, and operate.

I am talking about communities like Southern California, where late last summer record-breaking temperatures above 100 degrees Fahrenheit caused record-breaking demands on the grid of more than 50,000 megawatts. Utility operators were ready to mandate rotating power outages, but instead, the Navy unplugged 20 ships from the grid, and the Marine Corps shifted from the commercial grid to its microgrid, ensuring that neither the naval force's mission nor the lives of the citizens were interrupted.

The example above also demonstrates the second C, critical infrastructure. Energy security is critical to mission success. More broadly, critical infrastructure is the means to our ends. Our Navy and Marine Corps installations located in the United States and around the world are essential shore platforms from which we project our power.

Currently, we see infrastructure that is weakened because of age, vulnerable to physical and cyber threats, and a changing climate. We recognize the need to drastically change our approach, and the Department of the Navy is beginning planning on a 30-year infrastructure plan that is proactive and anticipates the requirements of our future force and their mission.

We protect our communities and critical infrastructure with a third C: climate action. No matter what we call it, extreme weather, temperatures, a rising sea, and depleting water sources, among other challenges, are threatening the naval service's installations and investments, the infrastructure that supports our critical missions, complicating logistics, and demanding more disaster and conflict response from the Navy and Marine Corps, while hampering their ability to respond.

These factors are changing our operational environment, and, by default, changing the cost and calculus when it comes to mission success.

We build resilience across the people and platforms of the fleet as a warfighting advantage, a tactical, operational, and strategic enabler. Ashore, we are making our structures, power grids, and fuel distribution systems and waterlines more survivable. Afloat, and forward-deployed, we are untethering from long and contested logistics tails to ensure we can stay on station longer, operate securely, independently, always keeping mission first.

Climate change can be used as a tool and a weapon. We see that across the conflict continuum. And, Mr. Chairman, we talked about energy as a weapon last year. We will continue to build our resilience, reduce the threat, and promote innovation to ensure that the Navy and the Marine Corps remain the world's greatest maritime fighting force in every environment.

Thank you.

[The prepared statement of Ms. Berger can be found in the Appendix on page 61.]

Mr. WALTZ. Ms. Jacobson.

STATEMENT OF HON. RACHEL JACOBSON, ASSISTANT SECRETARY OF THE ARMY FOR INSTALLATIONS, ENERGY, AND ENVIRONMENT

Ms. JACOBSON. Chairman Waltz, Ranking Member Garamendi, and distinguished members of the subcommittee, thank you for the opportunity to testify on the current state of Army's installations, and to answer any questions you may have.

I am grateful to the committee for its continued support and for its commitment to Army's soldiers, families, civilians, and soldiers for life. I look forward to working with you to help build the force of 2030 and beyond.

To realize the Army's 2030 goals, the future of installations must be now. Installations are the epicenter of everything we do in the Army. They are where we train, work, learn, and live. To strengthen Army readiness and build the force of the future, we must be laser-focused on providing state-of-the-art installations.

I am pleased to report that with the help of Congress, we are making progress. We are continuing our investments in barracks, with over \$11 billion planned between fiscal years 2024 and 2032. We are constructing new child development centers in multiple locations. We are building on congressional directives to deliver high-quality family housing and strengthen our oversight of the privatized housing providers. Each of these measures will help us to recruit and retain soldiers and families.

A key component of creating installations of the future is improving our infrastructure and tackling our deferred maintenance backlog. These challenges will take focus and strategic spending to slow the progression of these deteriorating facilities. With timely, adequate, predictable, and sustained funding, we can continue to reduce our maintenance backlog.

I thank the committee for your support in that regard.

Resilient installations foster ready soldiers, beginning with reliable access to energy. We have all witnessed threats to the electric grid, whether from cyber attacks, physical attacks, or severe weather events.

Installations can't afford to lose power when the commercial grid goes down. That is why we are developing onsite carbon-free power generation, battery storage, and a microgrid to support critical missions at all Army installations. Thanks to congressional authorities, we are collaborating with third parties to guarantee energy resilience without the need for upfront expenditures by the Army.

An integral part of installation management is environmental stewardship and protection of natural, cultural, and archeological

resources. Installations are home to 261 threatened and endangered species; 1.3 million acres of wetlands; and over 85,000 archaeological sites.

Our success as an environmental steward is due, in part, to the Army's Compatible Use Buffer Program, which is marking its 20th anniversary. The Army's exemplary stewardship of lands and resources reflects meaningful collaboration with State and local governments, Tribes, landowners, and other stakeholders.

The Army also bears the responsibility for cleaning up pollution at current and former Army sites. We share concerns about PFAS chemicals, and we are taking our obligations to address PFAS seriously, in a transparent manner.

Ensuring our soldiers and civilians are ready to support the Army mission requires prevention of accidents and injuries. The Army recently implemented the Army Safety and Occupational Health Management System. This modern safety-first program provides comprehensive oversight of each installation's safety and occupational health programs, and seamlessly integrates essential safety practices into daily operations.

Installations provide the foundational support of our people. As we build the Army of the future, we must make strategic installations—investments in our installations today using the most cutting-edge technologies, innovative public-private partnerships, and streamlined processes to accelerate results. Although this work will not be completed overnight, the future of our installations is happening right now.

Thank you for your continued support of our soldiers, families, civilians, and soldiers for life. I look forward to your questions.

[The prepared statement of Ms. Jacobson can be found in the Appendix on page 78.]

Mr. WALTZ. Thank you.

Mr. Oshiba.

STATEMENT OF EDWIN H. OSHIBA, ACTING ASSISTANT SECRETARY OF THE AIR FORCE FOR ENERGY, INSTALLATIONS, AND ENVIRONMENT

Mr. OSHIBA. Thank you, Chairman Waltz, Ranking Member Garamendi, and distinguished members of the subcommittee.

I am honored to join my colleagues this afternoon and equally honored to represent the nearly 700,000 airmen and guardians that defend our Nation each and every day. We are thankful for your consistent support over the years, specifically in the areas of energy, installations, and environment.

In the December 1941 edition of the Society of American Military Engineers Journal, General Hap Arnold, in assessing the state of the Army Air Corps at the time, said the following: Air bases are a determining factor in the success of air operations. The two-legged stool of men and planes will topple over without this equally important third leg.

He goes on to justify his words using the experiences of Germany and the United Kingdom in the European theater where the resiliency of airfields and, in some cases, the lack thereof, made the difference between victory and defeat.

General Arnold didn't mention the Pacific, but I am sure General MacArthur would have made a very similar statement given the importance of airfields in his island-hopping campaign.

Eighty-two years later, these words continue to ring true. They hold true for air and space operations; they hold true for airmen and guardians; they hold true for air and space weapon systems; and they hold true for air and space bases.

We view that third leg, our bases, as foundational to enabling and projecting combat power in air, space, and cyberspace. Everything we do begins and ends at our Air and Space Force bases.

The Department remains committed to ensuring they are ready by investing in the right capabilities at the right time and the right place and with a team of trained and equipped airmen and guardians. Resilient against the full range of natural and man-made threats, and optimized for effective and sustainable mission execution.

Since 2019, the Department's infrastructure investment strategy has served as our roadmap to make our bases ready and resilient through decisions meant to optimize the balance between effectiveness and efficiency. The strategy informs policy investment decisions supporting weapon system modernization and combatant command priorities while balancing the need to recapitalize our aging infrastructure and facilities which improve the quality of work and life for our airmen, guardians, and their families.

To that end, we recognize the crux of successful operations rests with our airmen and guardians. Our missions would be impossible to accomplish without them. This underscores the need to balance operational priorities with preserving the readiness and resilience of our most important resources: our airmen, guardians, and their families.

We continue to emphasize continued quality-of-life investments in housing, dormitories, child development centers, and other support facilities. I want to thank Congress for your generous support in this area.

Additionally, we remain committed to ensuring the safety and health of our service members and families who work and live on our installations and in our surrounding communities. We greatly appreciate Congress' substantial funding for environmental cleanup and research, including resources to tackle PFAS, which help us accomplish this important priority.

Finally, we are pursuing policies, investments, and activities that increase our agility, energy diversification, and quote, unquote, "lethality per gallon." This improves our ability to field and sustain a combat-credible force now and in the future.

By reducing the energy demand of our aircraft, we are increasing the range and cargo-carrying capacity of these legacy platforms. And by broadening the aperture of financing opportunities, to include smart third-party investments matched to energy vulnerabilities identified through in-depth planning and realistic exercises, we improve mission assurance through energy assurance.

In summary, your Department of the Air Force is committed to preserving ready and resilient installations. Our platform is to enable and project combat power using a strategy which optimizes

operational effectiveness and resource efficiency as part of our focused and determined one team to win our one fight.

Chairman Waltz and Ranking Member Garamendi, thank you again for the opportunity to testify today. We appreciate your continued support of our energy, installations, and environment enterprise.

I look forward to your questions.

[The prepared statement of Mr. Oshiba can be found in the Appendix on page 99.]

Mr. WALTZ. Thank you.

At this time, we will go to questions. I will begin by just saying—the committee is going to get tired of hearing me say this—but we have a teachable moment right now with what is going on with the Russian military in terms of readiness and how much that matters.

Along those lines, as I mentioned in my opening statement, recent NDAA's have sought to wean the Department and the services off their dependence on Russian energy, but we still have a problem. We are not there.

Obviously, following the Russian invasion of Ukraine, this became even more pressing. In the 2023 NDAA, we established a DOD goal, or a goal for DOD, to eliminate use of Russian energy at all main operating bases in EUCOM within 5 years. The provision also required planning for energy security, resilience, mitigation to reduce reliance on Russian energy for any new military base in EUCOM.

So, Mr. Owens, if you can start with what is—just update us on the status of eliminating reliance on Russian energy in EUCOM. How are we ensuring energy resilience for both main operating bases and/or smaller installations across EUCOM? I know the NDAA requires you to identify those, I believe by June, those bases, and then start implementing the plan. But if you can update us where you are on that process.

Mr. OWENS. Thank you for the question, and I think you are exactly right.

As I have watched, from the outside, the energy markets deal with the pivot away from Russian energy in Europe, it has been apparent that the things that have already been pointed out, that energy as a weapon, the reality of energy as a weapon is here, and it doesn't seem to be going anywhere anytime soon.

Relative to the specific things that are underway within DOD, there are people at this table who probably are better positioned to answer that, although I will take that question for the record.

[The information referred to can be found in the Appendix on page 127.]

Mr. OWENS. Pulling back from that, one of the things that is apparent to me this early on is that all of the things that we are doing to maintain mission assurance within the United States are things that we need to be aggressively deploying in EUCOM, in Europe. So that is efficiency, reducing the amount of energy that we need, resilience, reliability, and working with our partners and allies in these places to make sure that we are advancing our ability to be independent from any risks associated with energy supply.

Mr. WALTZ. Mr. Oshiba, can you address that as well?

My understanding is Ramstein was on—I mean, it is on the host nation grid, right? So, therefore, it is on Russian gas, Ramstein Air Force Base in Germany. At one point, my understanding was we exported domestic coal. We moved away from that about a decade ago, but I think we moved from one dependency to another. So can you address where we are going?

Mr. OSHIBA. Thank you for the question, sir.

You are right. What we are doing and what we are focused on is completing our installation energy plans in the EUCOM theater. We finished the one at RAF Lakenheath in the U.K. earlier this year. Ramstein is actually days away from being completed. We got the draft back in, and that focus area is on both what are the sources of energy we have, as well as vulnerabilities that we need to mitigate moving forward.

We have four more that we plan to accomplish this year: Aviano Air Base in Italy; RAF Menwith Hill, and Mildenhall back in the U.K.; and Spangdahlem Air Base in Germany. And that has been our focus area, and once we get those plans done, the idea is to then turn that into requirements that we can apply our resources to.

Mr. WALTZ. Great. Thank you.

My other question and then I want to move on to Ranking Member Garamendi and the members. Again, along the lines of reducing dependency on our adversaries—I mean we just cannot continue along this path—I understand a number of installations are moving to solar. It is not only carbon-reducing, but it is energy-diversifying. Obviously, you need battery and storage for that.

I can tell you, for example, Florida Power and Light is moving to 30 million panels by 2030; however, they source them from China. And we can point to the irony of one of the largest solar-producing plants in the world, in western China, on forced labor, and if you follow the transmission lines, they are being powered by coal. And China is opening more coal-fired plants than us and the rest of the world combined.

So talk to me about the sourcing of your panels and the sourcing of your battery materials. Are they being sourced domestically, or are you also—even if you buy from domestic utilities who are ultimately buying from China? And what is the Department's plan to reduce that dependency?

I will go with Mr. Owens, or anyone who wants to dive in. Because, obviously, that is a Department strategy, understanding your 30 days on the job.

Mr. OWENS. It is, sir, and I really appreciate that. I hope I don't have to use that get-out-of-jail-free card very much.

Mr. WALTZ. You only get one.

Mr. OWENS. All right.

I think—I really like the way that you have drawn a complete picture of the energy ecosystem, because the irony of solar panels powered by coal is truly something that we are aware of.

I think that the onshoring of these critical capabilities is something that we have as part of a larger industrial-based strategy that is going on within other parts of DOD, with other parts of the acquisition and sustainment team within DOD.

So in terms of the work that is going to be undertaken under the battery mineral—sorry—the Battery Materials Initiative, under the IRA [Inflation Reduction Act], under the Bipartisan Infrastructure Law, under the CHIPS Act, I think all of those things are moving us in the right direction in terms of being able to divest ourselves from these vulnerabilities that you have correctly pointed out.

Mr. WALTZ. Ms. Jacobson, could you—I mean, you mentioned specifically—and I get it. It is carbon-reducing, but as I said in my opening remarks, that has secondary and tertiary effects when China controls the cobalt mines in the Congo and that is necessary for battery storage. That is an issue.

Can you talk to me about that supply chain surety?

Ms. JACOBSON. Chairman Waltz, thank you very much for that question. It is absolutely essential that we address supply chain throughout our portfolio, but especially here where, as you say, China and other countries control the supply of those critical minerals. And because we are so intent on putting islanding power on every single installation through a microgrid along with battery technology, it is very, very important to us.

We recognize that the challenges of relying on foreign sources of mined and processed minerals that we have to bring that domestically, and we are teaming with DOD and other Federal agencies in this effort to stimulate domestic mining and processing of these minerals so that we can produce batteries domestically.

And so many partners in industry are already taking this on, as you know. There is huge investment in domestic battery manufacturing along with sourcing of those raw materials.

DOD is using the Defense Production Act, as was set forth in a Presidential Executive order, and we are involved in the Federal Consortium for Advanced Batteries as part of DOD; but Army is committed to doing our part to make sure, again, that we have a robust and secure domestic industrial base for batteries.

Mr. WALTZ. I yield to Mr. Garamendi, but I will just say from my perspective, I understand we are charging headlong into our climate plans and executing those plans, but we cannot trade risk to climate to risk to force, right. And I will be looking at detail. I understand what we have to do, but I will be looking at details of how the Department is actually doing it, or do we need to tap the brakes on some of these plans until that onshoring can be complete?

Over to you, Mr. Garamendi.

Mr. GARAMENDI. Can I be your partner as you explore all of those issues? Very, very important. We have to do that.

I would just add, and then a couple of questions, that the other pieces of legislation—you mentioned the Inflation Reduction Act, the Infrastructure and the CHIPS Act, and the Science and the CHIPS Act—are all intended to deal with the totality of the energy issue, and the military is a piece of that and certainly will be the beneficiary of those other Acts.

With regard to onshoring the energy systems, if you want to take advantage of the tax credits in the legislation, and they are very, very significant, it has to be made in America. And so, that will bring a lot of that back home on the tax side of it.

Mr. SCOTT. Will the gentleman yield for 1 second?

Mr. GARAMENDI. Please.

Mr. SCOTT. Ford Motor Company is partnering with CATL, which is a Chinese company, to get the tax credit. So that is where I think—

Mr. GARAMENDI. Well, there ought to be a law.

Mr. SCOTT. I agree.

Mr. GARAMENDI. And we have to watch that very carefully. There will be a lot of ways to escape and to take advantage inappropriately, and so, it is our task and the oversight to do that, and if we do, we will be able to resolve those particular problems.

There are so many different pieces to this puzzle, and we need to make sure that the departments are looking at all of the opportunities and engaged in all of these areas. So, you know, there is information that all of us might have. We should bring it to the attention of our committee as it involves the installations, the energy systems, or the environmental pieces of it. And if we do, we will be making some very, very good progress.

I don't know how much time I have to ask questions, but I am certainly opining here for a while. So forgive me for that.

But there are some things that are going to be really important as we go forward, and I am going to go back to something that has been bothering me all of these many, many years, and that is the facilities themselves, the depots, the repair facilities, the shipyards.

And in the testimony, all of you mentioned or at least touched on this, on the issues of the necessity of improving, upgrading, and, indeed, even making viable these critical facilities. And I would like you to quickly provide us with assurance that these are high priorities.

We didn't bring up the arsenals and the making of 155 artillery shells, which I suppose we could spend time on, but that is included in this.

So let's just go down the line. Let's start with the Navy. How many times do we have to talk about the SIOP [Shipyard Infrastructure Optimization Plan] program. Please don't tell us it is 30 years. Tell me what you are doing this year and the next 4 years and then we will go to the other bases, please.

Ms. BERGER. Yes, Congressman Garamendi. As we focus in the near term, we are taking steps on what we see as an historic opportunity—and thank you to Congress for the funding to do it—for our Shipyard Infrastructure Optimization Plan.

This is a place where we have area development plans for two of our shipyards on the east coast, and we continue forward to make progress in all of those efforts, in incremental and in steps. This is a place where we can integrate some of what you were just talking about in terms of the IRA and the IIJA [Infrastructure Investment and Jobs Act]. There are tremendous opportunities to make sure that we are reaching that end state of resilient infrastructure that supports the mission that is critical that comes out of those shipyards.

And in parallel, we have our organic industrial base, some of our fleet areas and our facilities that support some of our aviation depots and others where we are also investing in making sure that we are keeping those up to scruff so that way we can ensure that we are supporting the mission.

Mr. GARAMENDI. Specifically, you have got four dry docks that are not being used now for earthquake. Specifically, what is the situation, if you can share it with us—if it is classified, we will take it up elsewhere, on the four dry docks in Washington State?

Ms. BERGER. Yes, sir. Let me take the details for the record for you, but we moved swiftly to shut down when we saw that safety and readiness concern, and we have put forward the projects that will get us on track to be able to start to make those corrections already starting on two of the dry docks. And I will be glad to follow up with you in detail to provide exactly where everything is.

[The information referred to can be found in the Appendix on page 127.]

Mr. GARAMENDI. The 1st of March is nearby. How about by the end of March?

Ms. BERGER. Yes, Congressman.

Mr. GARAMENDI. The details.

Ms. BERGER. Absolutely.

Mr. GARAMENDI. I think I am out of time, Mr. Chairman, but I would go down the line and just let it go at that.

Mr. WALTZ. Mr. Wilson.

Mr. WILSON. Thank you, Mr. Chairman.

And, indeed, I agree with Chairman Mike Waltz that energy is so critical for our continuity at our installations and, additionally, a great opportunity, and that is small modular reactors.

And I always enjoy working with Congressman Garamendi to fill in puzzle pieces, and a puzzle piece is small modular reactors.

And I am really grateful that in meeting with our allies last week in the Czech Republic, they are making tremendous progress on small modular reactors, and they are in a contest, a good one, with Romania to see who can build the first. And we need to be there, too, and so I hope every effort is being made to develop.

In particular, Mr. Oshiba, the Air Force. Is it on track with the guidance provided by the 2021 National Defense Authorization Act to identify suitable locations for development and operation of microreactors, small modular reactors for the year 2027?

And I will tell you a beautiful location for energy independence, and it would be wonderful to spend a lot of time there, is the beautiful territory of Guam.

And then after you do that, I want to invite you to South Carolina, the Savannah River Nuclear Laboratory. It is 310 square miles. It is probably the largest open area or secure area, and it is really close to Augusta National Golf Course. So it is a good place to visit.

But, indeed, those are two locations that come to mind.

Mr. OSHIBA. Congressman Wilson, I think I feel like I have swung behind the ball and missed twice.

But we do have a small modular reactor pilot project going on right now at Eielson Air Force Base in Alaska. It was chosen based upon the reliance of the power system there to a coal-fired power plant that we need to get rid of.

So we have actually gone out with a request for proposals. We have received some very attractive proposals. We are in the process now of going through the licensing process with the Nuclear Regulatory Commission, and from what I can tell, from what I have

heard so far, everything is going along very, very smoothly. We have gotten a lot of interest, a lot of community support.

And I have taken note of the two other candidate locations you have mentioned.

Mr. WILSON. And, indeed, we need to work with our NATO allies, Czech Republic and Romania. But, gosh, you can't have a better location than beautiful Guam. You get to go to the beach. And nothing is as good as the Savannah River Nuclear Laboratory with its proximity to Augusta National.

Okay, along with that, Secretary Owens, the Department of Defense's Readiness Environmental Protection Integration program, known as REPI, is a vital tool for preserving the training missions and operations of military installations in South Carolina Midlands region, including Fort Jackson, which is the Army's largest and most active initial entry training center, by protecting more than 20,000 acres throughout the Midlands from incompatible development that would threaten military readiness.

If the DOD continues the trend of increasing the budget for REPI, as DOD has done in recent years, what locations across the United States would be prioritized to ensure preserving training missions and operations at military installations?

We will make the entire State of California an open space.

Mr. OWENS. There might be some arm wrestling up there if that is proposed.

I think the REPI program is an excellent example of the type of capability that can be deployed when compatible use is something that we are focused around. My understanding of the way that that program operates is that we work with the military departments to understand what their needs are, and then prioritize projects according to how we can best serve the military departments from a readiness and mission assurance standpoint.

Mr. WILSON. And additionally, I would like to ask in regard to the United States European Command area of operations, what additionally have we done to reduce our reliance on Putin's utilities into countries such as Bulgaria and Romania?

Mr. OWENS. We have continued to drive efficiency and essentially looking at all the things that our partners and allies were doing in Europe. We have taken steps that are similarly aggressive on the energy efficiency side of things at our installations.

Mr. WILSON. And, indeed, with the pipelines through Ukraine, hopefully things are changing.

So I yield back. Thank you.

Mr. OWENS. Thank you.

Mr. WALTZ. Ms. Sherrill.

Ms. SHERRILL. Thank you.

It is wonderful to see all of you. Nice to see you, Secretary Jacobson. Thank you for joining me at the expo at the Pentagon, as we saw some of our future energy-saving technologies.

Last year I had the opportunity to visit and tour Picatinny Arsenal in my district, and I was able to go through the software center, which really houses some of our most highly talented workforce winning awards as, quite frankly, the building is falling down around them. Highlights include peeling paint, leaks during rainstorms.

It really is unfortunate given that we continue to face recruiting shortfalls, and here we are trying to recruit some of the most talented workforce and trying to do so with these aging labs and infrastructure. So it really makes it difficult to attract top talent.

And I know the Pentagon has expressed concern regarding growing deficiencies in critical laboratory infrastructure across the Department. Heidi Shyu, Under Secretary of Defense for Research and Engineering, said during a May 2022 congressional hearing that her top priority is upgrading the Department's labs.

So what progress and updates can you provide on how the DOD is prioritizing which labs to upgrade? And when can Picatinny Arsenal's two labs and four engineering facilities maybe expect to be upgraded?

And I am sorry. That is for Secretary Jacobson.

Ms. JACOBSON. Thank you so much, Congresswoman Sherrill. It is very nice to see you again, and thank you so much for visiting our energy expo. It was a great day to have you there.

We fully share your concern about the aging facilities that house our incredibly important labs, and we recognize that by not addressing these facilities and upgrading them to acceptable standards, we do lose talent. And we recognize that part of making sure our facilities are in good shape, that we have this sustainment funding, the MILCON funding, the restoration and modernization funding to accomplish necessary repairs, that that presents a recruiting challenge when we don't do that.

We are prioritizing and prioritizing and prioritizing, using a lot of different tools and models to determine which infrastructure is at most risk, where does it fall in terms of the design, if it is a MILCON project. And we every year go through this, you know, facilities investment process to make sure that we are addressing the most important need.

And with respect to the two labs at Picatinny Arsenal, I commit to getting back to you about specifics about status of modernization and upgrades at those labs, because I agree they are critically important, and we want to recruit the best talent available.

Thank you.

Ms. SHERRILL. Well, thank you. I appreciate that. It was, as I met with the general, one of his top concerns as well. So thank you so much. I really do appreciate that and look forward to hearing from you.

Last May, the Marine Corps Logistics Base [MCLB] Albany became the first DOD installation to achieve net zero electricity status, with the base producing 100 percent of the energy they use. They were able to do so through incorporating innovative energy technology, such as biomass steam turbines, landfill gas generators, and advanced microgrid controls into their installation.

Other carbon pollution-free resources include wind and solar power alternatives, including new systems such as GAF Energy's integrated solar roofs that directly integrate solar technology into roof shingles.

So Secretary Berger, congratulations on that success at reaching net zero. Can you elaborate on some of the challenge that MCLB Albany faced in achieving net zero, as well as lessons learned, rec-

ommendations, and takeaways from that process so other services can avoid those pitfalls as they work towards net zero installations.

Ms. BERGER. Congresswoman, thank you. We are very excited about this, and I had the honor of going down with the Commandant of the Marine Corps to be able to celebrate this milestone with him, and the first thing that he talked about was how this was warfighting, this was about mission success.

This is a logistics base which is foundational to the Marine Corps, and so as we talk about a contested logistics environment and how we are facilitating the way that we support the fight, it is just a wonderful example in a number of ways.

This is a testament to the Marines who were committed year after year, commanding officer after commanding officer, to work with the community that surrounded them through trial and error and continuity of commitment—

Mr. WALTZ. Ms. Berger, I hate to interrupt you. If you could submit the rest for the record. The member's time has expired.

[The information referred to can be found in the Appendix on page 128.]

Ms. SHERRILL. I'll take that for the record. Thank you, Mr. Chairman.

I yield back.

Mr. WALTZ. Thank you.

Mr. Scott.

Mr. SCOTT. Thank you, Mr. Chairman.

The chair, Congressman Waltz, hit on this a little bit with regard to solar panels, battery technology. I will tell you that, Secretary Owens, I do think that the DOD should make it very clear that the DOD, the United States Department of Defense, is not going to purchase any vehicle that utilizes CATL or any other Chinese battery technology.

I refuse to believe that with all of the great companies in this country and with all of the great minds at Georgia Tech, MIT [Massachusetts Institute of Technology], and everywhere else in this country, that we in this country cannot develop better technology than the Chinese have. And if it takes us 12, 18, 24 months to do it, then that is better than sending people who don't share our interests or our values U.S. tax dollars.

And so, I think that corporate America is going to have to understand that if they are going to partner with China, then they are not going to sell their vehicles to the Department of Defense.

That said, I realize part of that manufacturing is not going to come back to the U.S. It doesn't all have to come back to the U.S. It is just we shouldn't be buying it from people who don't share our interests or our values.

Secretary Oshiba, can you briefly explain what materials the Air Force considered for its facility to be built under the pilot program on the increased use of sustainable buildings?

Mr. OSHIBA. Congressman Scott, I apologize. I may have to take that one for the record as far as the details go.

[The information referred to can be found in the Appendix on page 127.]

Mr. SCOTT. My understanding is that you only considered concrete. Is that correct?

Mr. OSHIBA. For the pilot project that we are undertaking, I think it is at Patrick Air Force Base, that was the one material that we focused on for that one project, yes, sir.

Mr. SCOTT. And so the whole purpose of the project is innovative concepts, new materials. Why didn't you consider a cross-laminated timber?

Mr. OSHIBA. Sir, I would have to take that one for the record. I am not sure exactly why we didn't look at a broader range of materials. I do know the focus was specifically on concrete. And then we also looked at what other kinds of resilient design techniques that we could incorporate as part of the design for that specific area.

[The information referred to can be found in the Appendix on page 127.]

Mr. SCOTT. There has also been language that is specific to—not telling you that you have to use it, but that you have to consider cross-laminated timber. And the use of cross-laminated timber is certainly a much more renewable resource than concrete is. I mean, when you take concrete down you create a pile of rubble that nothing can be—nothing can be done with. And so, I just want to make sure that cross-laminated timber is part of the discussion as we look to—

Mr. OSHIBA. Sir, we can certainly take a look at that specifically. And if it is not there, then I don't see why we couldn't consider it.

Mr. SCOTT. I would appreciate that. And then Secretary Jacobson, the Army somewhat did the same thing. But in your testimony you say: While lower emission building materials are in development, these materials are not currently at the appropriate technology readiness level for direct implementation of the project. But other countries and the private sector are using cross-laminated timber now. Can you explain those comments further?

Ms. JACOBSON. Congressman Scott, thank you for the question. And I want to start by saying that we have two projects underway at Joint Base Lewis-McChord using sustainable material. They are both barracks projects. The first one, as you mentioned, is using sustainable low-carbon concrete. But the second one is going to use cross-laminated timber. Really, it was just a planning issue with the Army Corps of Engineers. They were a certain way along in the planning for that first barracks, and to change the material so substantially would have affected the timing of the construction and so forth. But the second barracks project for fiscal year 2025 will be made of cross-laminated timber. We are committed to that.

Mr. SCOTT. Well, as somebody from the private sector, I think that you will find that the more options you have with the way you construct buildings—

Ms. JACOBSON. Yeah.

Mr. SCOTT [continuing]. Not only are you going to get a better building, but you are going to get it at a better cost. And so I would hope that you would consider cross-laminated timber where it can be used. I realize there is some situations where it is probably not appropriate; but where it is appropriate, I hope that you will consider it.

And, again, Secretary Owens, I know you are new to the job, but I will tell you, we are not going to spend DOD dollars on Chinese

technology for batteries. And if it slows us down, 12, 18, 24 months—

Mr. STRONG [presiding]. The gentleman's time has expired. Thank you, Mr. Scott.

The Chair recognizes Mr. Davis from North Carolina.

Mr. DAVIS. Thank you so much, Mr. Chair, and to the ranking member as well.

Fort Bragg, North Carolina, is an installation that is home of some of the most elite military units, as we understand. Also, have understanding that the North Carolina Department of Transportation has offered to take over maintenance of roads at Fort Bragg as soon as the Army brings the roads up to the DOT standards. Letting NCDOT take over maintenance would save the Army nearly \$400,000 we estimate, in maintenance per mile at Fort Bragg, which we understand have over 1,500 miles of road total.

There are many examples of public-private partnerships and third-party financing that have led to vast improvements in conditions in sustaining infrastructure. Yet, the Army here remains resistant to this program. At this time, when the Army's faced with multimillion dollars of maintenance backlog, and facing hard choices about how they use dollars, the Army should be using all tools at its disposal to improve infrastructure, especially when the continued decline of these roads are present.

So does the Army have any alternative plan to correct these conditions and invest in installations such as Fort Bragg?

Ms. JACOBSON. Congressman Davis, thank you very much for that question. Because the programs, of course, that you are talking about, intergovernmental service agreements, Army is the biggest user across the Department of those programs. And we recognize that they save enormous amount of costs to the taxpayer, because of making these agreements with State and local agencies who have the expertise to supplement the expertise that Army simply doesn't have. We recently entered into such an agreement for road maintenance with the State of Texas where the State of Texas Department of Transportation will provide road maintenance—this was actually with all the other services, for all services in Texas. I am not familiar with why there is any progress not being made on any intergovernmental services agreement at Bragg with respect to road maintenance and working with the DOT, but I will find out and make sure we get back with you.

Mr. DAVIS. Thank you so much. Unfortunately, Camp Lejeune has a long history of service members that has been harmed by environmental contaminations, specifically dealing with the water. In recent years we have learned that service members have been exposed to another contaminant, PFAS, that exposes them to additional health risk. In the fiscal year 2021 NDAA, you were asked to provide a timeline and cost estimate for cleanup of all sites that have been contaminated by the PFAS. The response to that requirement indicated that while the Navy has begun the cleanup process, phase 2 of the process of the remedial investigation and feasibility study will not be completed until the last quarter of fiscal year 2029, which means we are probably looking at 2030 before the meaningful cleanup.

My question is, with a timeline like that, explain how you believe that the Department is fulfilling its commitment to clean up the responsibility—this responsibility here of cleanup at Camp Lejeune in particular? And why is it taking so long? Why will it take so long?

Ms. BERGER. Congressman, we share your concern for people who are harmed by contaminants in water and take that very seriously. And anybody who has had exposure should get the medical care to which they are entitled to from all the different places that it is provided. I will need to take, for the record, what the time is that will take us out to 2029 and be happy to follow up with you on that answer so that you get the details that you are looking for.

[The information referred to can be found in the Appendix on page 128.]

Mr. DAVIS. Thank you. I yield back.

Mr. STRONG. Thank you, Mr. Davis. The chairman recognizes himself for 5 minutes. Thank you each for being here today. During my time as chairman of the Madison County Commission in Huntsville, Alabama, I saw firsthand the impact a strong community can make on an Army installation. To name a few instances at Red Stone Arsenal, the region pulled together to move the most popular entrance back three quarters of a mile to comply with new regulations and growth of the installation. We built new officers and base leadership housing, contributed over a half a billion dollars to improve infrastructure. Started new partnerships with some of the best research universities in the Nation. And my personal favorite, we built a \$55 million minor league baseball stadium, the Rocket City Trash Pandas, which sits right outside of Red Stone Arsenal, along with a \$50 million amphitheater at no cost to the Department of Defense. Because it was the right thing to do to support our warfighters, their families, and our contractors. Quality of life makes a difference.

With the DOD facing a maintenance backlog of around \$130 billion, my question is, what can the communities do to better serve their installations?

Mr. OWENS. Thank you for the specific examples of what I believe to be very true relative to the interdependency of defense communities and installations. The Office of Local Defense Community Collaboration [OLDCC] is a program that is run as a defense field agency that is resourcing communities to be able to look at that question, specifically. So to try to find out what needs the Department has in communities; what OLDCC can provide to make it possible for those communities to come to the table as partners, as collaborators to identify the places that we should be partnering together to improve quality of life for all of the people in the community. Seventy percent of our service members and their families don't live on installations, they live in the community.

So specific to any ideas right now, I would be happy to take that for the record. But I think you have pointed out some specific examples of quality-of-life improvements that could be used other places to be replicated to improve the conditions for our service members. And Trash Pandas is an outstanding name. That is really commendable.

Mr. STRONG. It has been great for our community. No doubt.

Mr. OWENS. I'll bet, yeah.

Mr. STRONG. The next question is what benefit has the Defense Community Infrastructure Pilot program provided for installations?

Mr. OWENS. I have a list in the binder. I would be happy to share that with the committee for what specific things that have happened. But DCIP is another example of a program that is, again, organized and operated by OLDCC to be able to provide the resources to stitch together the infrastructure that exists on the other side of the fence line that our military service members and our communities rely on.

Mr. STRONG. Thank you. Ms. Jacobson, the Ukraine conflict has highlighted shortfalls within the U.S. defense production capacity and supply chain. I think we can all agree it is better that these issues be fixed before we find ourselves in the middle of our own conflict.

In Alabama, we have Army Materiel Command at Red Stone Arsenal, and the "combat vehicle center of the free world" and one of the largest storage and distribution centers of ammunition and missiles at Anniston's Army Depot.

My question is what lessons has the Army learned regarding the ability of our arsenals and ammunition facilities to meet future wartime demands?

Ms. JACOBSON. Thank you very much. And thank you for your support of Red Stone Arsenal. We really appreciate it. It is, obviously, as you say, home to Army Materiel Command and so many other important functions across DOD, actually, across the Federal Government even.

What we recognize is that as we start to build new operation systems and new platforms, we have to have the facility to house those platforms. So not only do we need to make sure our organic industrial base is modernized enough to be able to keep pace with the new platforms that we have to replenish, but also, to make sure that we have the facilities, the maintenance facilities and so forth to house those new equipment, and to make sure that we are giving it state-of-the-art maintenance facilities and so forth and manufacturing facilities. And this is, obviously, a huge priority and part of our facilities investment planning.

Mr. STRONG. Thank you, Ms. Jacobson. I yield back. The Chair recognizes Ms. Tokuda of Hawaii.

Ms. TOKUDA. Thank you, Chair. First of all, thank you, everyone, for your testimony and for coming before our committee. I have some questions, as you can guess, on the Red Hill tragedy that took place in Hawaii. I appreciate the conversations we have had as well. Appreciate for all the testimony, including what you are doing and planning to do. But as we have discussed before, what is at the core of this is rebuilding a broken trust that exists right now. That takes more than words, it takes actions, and it takes giving people confidence that the injustice that has happened is recognized and will not happen again.

And so, you know, when I take a look at what is still being required in terms of questions about important information that they would like shared, even the fact that video that was released by independent sources of the fuel leaking out and spewing out, quite

frankly, of the Red Hill pipeline in November 2021, has still not officially been released right now.

What efforts do we—you know, what assurance do we have, I guess, Ms. Berger, that, you know, the information that people are demanding, the transparency and disclosure that people expect after something like this, will actually take place, including a lot of the relevant FOIA [Freedom of Information Act] requests that have been put forward so that the people of Hawaii can really know what happened and what will happen and can have confidence that the relationship going forward will be one of openness and of trust?

Ms. BERGER. Congresswoman, thank you, too, for the time and recent conversations. And I am grateful to have had the opportunity to engage across the Hawaii delegation with both on- and off-island leadership and citizens and constituents to understand. I think that part of building trust is building understanding as well. And it comes from all sides who are involved. And so every day, we at the Department of the Navy and the Department of Defense need to make sure that we are being responsive, being transparent, providing that information. You note that there are some FOIA requests that have come. FOIA is a process that does take some time, but we will make—

Ms. TOKUDA. If I could just interject here since I am limited in time. Do you feel that you folks have been, in fact, responsive? And I understand that FOIA is a process, but given the extreme urgency of having 20,000 gallons of jet fuel pumped into your water and people poisoned, your families worried about if they are getting sick because of what they are exposed to, do you feel that it has been responsive? Do you feel the timelines are fair, given the information people are demanding right now over Red Hill?

Ms. BERGER. Congresswoman, if there are specific pieces of information that I can help you to find out, I would be glad to.

Ms. TOKUDA. I think we are taking a look at what people have been asking. It has been in the paper. It has been well documented. Again, and I know I am running short of time. I don't want to continue this discussion. This really is a disrespect that happened to the people of Hawaii. What we are looking for is transparency and urgency. And regardless of the processes and the timelines that exist for things like FOIA, I think if we are going to rebuild what is a broken, a sadly, badly broken trust, it is about going above and beyond to make sure people have the timely answers to the questions that they deserve answers to and exposure to. So if I could go on—and, you know, I know we had a conversation, both Mr. Owens and yourself, about the post-closure plans. Even during my tour of Red Hill last week, I had mentioned that whatever the contractor Nakapuna was doing that it had to be done right and well. Or it would not only be a distraction, but it would be further mistrust, it would further degradation of the relationship.

So, I was sad to see an article yesterday talking about the fact that this contract was an enigma because they couldn't get basic information about what the contract would do and how would they even engage. Would it be one on one? Would it be a website? They were actually told, the newspaper, to go FOIA your request. That is not the response that we want. Is this acceptable that your con-

tractors and subcontractors can operate in the dark, while, again, people are asking for light and answers in this case.

Ms. BERGER. Congresswoman, thank you for noting that. I saw the same article yesterday, and it is something that I have asked my team to help me to understand what happened there. I saw it yesterday for the first time and will provide a response to your office.

Ms. TOKUDA. Okay. Do you think that is acceptable of an answer? The company that you have hired to basically engage with the community, saying they will not explain how to the taxpayers of Hawaii they will be doing this?

Ms. BERGER. Congresswoman, what is acceptable is a clear answer and a transparent process. And that is what I owe to you, and I will get to you.

Ms. TOKUDA. Thank you. And you owe to the people of Hawaii, as well, given what we have experienced.

My last just comment here, because I know I don't have time for an answer. Infrastructure is a problem. Sadly, we were not surprised about Red Hill. We haven't been surprised about the Maui Space Facility, Schofield Barracks—

Mr. STRONG. The gentlewoman's time has expired.

Ms. TOKUDA. Thank you very much. Infrastructure is a concern. We need to keep up on this.

Mr. STRONG. Thank you, Ms. Tokuda of Hawaii. Thank you.

The Chair now recognizes Mr. Gimenez of Florida for 5 minutes.

Mr. GIMENEZ. Thank you, Mr. Chairman. Mr. Owens, what is the greatest existential threat to America today?

Mr. OWENS. The pacing challenge for the Department of Defense is the People's Republic of China.

Mr. GIMENEZ. Okay. Ms. Jacobson, same question.

Ms. JACOBSON. I agree with Mr. Owens' answer.

Mr. GIMENEZ. Okay. Ms. Berger.

Ms. BERGER. The same, sir.

Mr. GIMENEZ. And Mr. Oshiba, the same thing?

Mr. OSHIBA. The same thing, sir.

Mr. GIMENEZ. Okay. Thank you. I appreciate that. I am 100 percent in support of Mr. Scott's assertion that any material that goes into our combat vehicles, none of it should be manufactured by the People's Republic of China. It would be insanity to have our greatest adversary supplying us with the materials needed for us to defend ourselves. Would you—would anybody disagree with that, any of you? I guess not. Okay.

I am concerned—and I also am agreeing with our Ranking Member Garamendi about nuclear and small nuclear reactors to be able to power our military bases and essential infrastructure, military infrastructure.

I am really concerned about solar panels. Not only because the materials come from China, and they are manufactured from China, but also from a security perspective. How do you defend them? Anybody have an answer for that? How do you defend solar panels? If you start putting out solar panels to power our bases, how do you defend that? How do you secure them?

Mr. OWENS. Representative, I will take a stab. I think that the strategy for DOD is not dependent on any one technology. What we

are trying to do is diversify our energy ecosystem in a way that allows us to be able to take advantage of multiple different sources of energy to be able to harden and make resilient all of the various aspects of how we procure and use energy. So that is electricity from wind, from solar, from nuclear, from gas, from diesel.

All of those sources, when you try—when you deploy a distributed energy platform, disruption of any one of those things is not catastrophically problematic for the entire system. All right. So mission assurance is guaranteed by diversity.

Mr. GIMENEZ. Now are we talking about military bases now? Especially in Europe, right? I mean, we are talking about trying to get away from Russian energy, et cetera, et cetera. And so, when I started thinking about it, wouldn't solar panels be the most difficult thing to defend in a military base? You can't harden it. They have to be outside. So how do you defend solar panels? How do you defend wind power? That has to be outside, too. So how do you do that in a military base?

Mr. OWENS. Thank you for the question. I am realizing that I am way over my—

Mr. GIMENEZ. Omaha. Have you all figured that one out? Have you figured that out yet, that you are now going to put in our military bases two sources of energy that are probably the most difficult things to defend against attack?

Mr. OWENS. The solution is in much broader diversity than we currently have, and that makes for resilient and reliable.

Mr. GIMENEZ. Well, I would argue that it would be much more resilient and reliable to go with two nuclear, you know, small nuclear plants than putting some solar, some wind, and one nuclear plant. I would argue that because A, nuclear plants are much more reliable. They don't need wind. They don't need sun to power them. And you could probably, probably fortify them much, much easier than solar and wind. This is talking from a purely military perspective. So with that, I will yield the rest of my time back. Thank you.

Mr. STRONG. Thank you. The Chair now recognizes Mr. Vasquez of New Mexico.

Mr. VASQUEZ. Thank you, Mr. Chairman. I am very pleased to see the Readiness Subcommittee's prioritization of MILCON projects, base infrastructure, environmental protection, and energy resiliency. I would also like to thank the honorable witnesses here today for taking the time to speak with us this afternoon, for your public service to strengthen the defense of our Nation.

The military installations in New Mexico's Second District play some of the most critical roles in our national defense. But if you saw the condition of the infrastructure at some of these bases, you wouldn't believe it. For example, the service members at White Sands Missile Range and Holloman Air Force Base who are testing groundbreaking technologies are still living in communities with buildings built just after World War II.

At a time when our military is struggling with recruitment and retention, we should prioritize improving the quality of life of facilities, like housing and child development centers for our service members and their families. We ask them to do a dangerous job, and they deserve better.

To make matters worse, the Air Force recently notified the New Mexico Environment Department in 2018 that PFAS is prevalent in surface and groundwater throughout the State, particularly in Albuquerque right outside of Kirtland Air Force Base. And samples collected at Holloman Air Force Base also showed PFAS levels as high as 1.29 million parts per trillion. Experts state that the lifetime of drinking water exposure to these toxic chemicals is 70 parts per trillion. That is over 18,000 times the lifetime level of exposure, and we should do more to protect the health and well-being of our service members. I think the time to act is now, and I look forward to discussing these important issues with you all.

As a former city councilor in the city of Las Cruces, New Mexico, where the National Guard was found liable for contaminants of PCE [perchloroethylene] in a Superfund site that cost the city of Las Cruces \$6 million, we, as a city with limited resources, had to go to court with the Department of Defense in order to clean up those contaminants because they were found by the EPA to be in the drinking water of our residents. That to me, as a local elected official, was an unacceptable response from the Department of Defense not to accept the liability that it later took a local government to be able to find at fault.

Now my first question is for Mr. Owens. Mr. Owens, could you provide just a quick status update on the Department's efforts to completely phase out all firefighting agents containing PFAS by 2024.

Mr. OWENS. I would be happy to, and thank you for your commitment to this issue. It is vitally important that the full Department takes its responsibility to deal with the legacies of the decisions that we have made.

In January of this year, the Department of Navy certified a military spec for a PFAS-free firefighting foam. The military departments are—we are in the process now of certifying that that is—that those formulations do, in fact, work. And after that, the military departments will be implementing their phaseout plans according to the plans that they have developed.

Mr. VASQUEZ. Thank you, Mr. Owens. And can you provide any insight on specific steps that the Department has taken to ensure that aging legacy infrastructure, like family housing, child development centers on installations are being properly modernized as mandated in previous NDAA's?

Mr. OWENS. My first job out of college was working as an energy manager at Fort Belvoir which is just south of here. And I have sort of lived both ends of this now in terms of the infrastructure challenges from an installation level, and from a department level.

I think that there are—the FSRM [facilities sustainment, restoration, and modernization] backlog, the challenges that we have facing a chronic underfunding of the infrastructure maintenance and the deferred maintenance and repair, is a very big problem and something that I am going to be focused on going forward. And I look forward to partnering with the military departments to make sure that we are bringing the resources that are needed to modernize and repair these pieces of infrastructure, particularly on the housing side.

Mr. VASQUEZ. Thank you, Mr. Owens. And that is something that I believe myself and other members of this subcommittee, in a bipartisan way, are willing to work on to make sure there is accountability. And that, I can tell you, it is very hard to attract not just service members but families to the missions at Holloman Air Force Base when there is a danger that they will be ingesting toxic chemicals from buildings that have asbestos and other chemicals that have yet to be remediated. Despite the record investments that we have made in our defense budget year after year, I think this is a critical readiness component, especially where we are handling such critical missions in places like White Sands Missile Range and Holloman Air Force Base that are so critically important to the defense of our Nation.

Lastly, just one more quick question with these 15 seconds I have. Ms. Jacobson, are there any plans to nominate White Sands for any additional ERCIP, Energy Resilience and Conservation Investment Projects, as far as you are aware?

Ms. JACOBSON. May I take that for the record and let you know?

[The information referred to can be found in the Appendix on page 128.]

Mr. VASQUEZ. Yes, thank you, Ms. Jacobson. I yield back.

Ms. STRONG. Thank you, Mr. Vasquez.

The Chair recognizes Mr. Moylan of Guam for 5 minutes.

Mr. MOYLAN. Thank you, Mr. Chairman. Ms. Berger, were you in Guam recently? I thought I saw you. Were we sitting next to each other at the commencement there of the Camp "Ben" Blaz? Well, thank you for coming to Guam.

Ms. BERGER. It is nice to see you again.

Mr. MOYLAN. I appreciate that. So I do have a question for you. So in 2005, the USS *San Francisco* ran aground in the Western Pacific and was successfully repaired on Guam. By contrast, when the USS *Connecticut* ran aground in 2021, it proceeded to Guam. It languished in the harbor and was unable to be repaired.

So Ms. Berger, can you please speak to the dangers posed by America's backslide in ship repair capacity in the Western Pacific, and the importance of facilities such as Guam now closed dry dock?

Ms. BERGER. It is very nice to see you again, and it was a good thing to spend time at Camp Blaz which emphasized the importance of Guam, and as we build out some of the geostrategic importance of our focus there. As far as the ship repair, I would like to take the detailed question for the record to make sure that I provide for you the perspective of some of my partners who work in that section of the Department of the Navy. But certainly, it is why we are focused on capitalizing right now our shipyards to make sure that we are able to provide that infrastructure. And as you noted it is critically important to supporting our warfighting mission. So let me get back to you with more, but I would be glad to follow up.

[The information referred to can be found in the Appendix on page 128.]

Mr. MOYLAN. It has been shown successful when we did have it. And with this current threat, I think it is very important that we bring this back. So thank you.

And then for Mr. Owens, in your testimony, you stated that a long-term extension of H-2B visas is needed to meet Department of Defense construction requirements. Do you believe that the failure of the extended H-2B and therefore have construction projects fall behind deadlines or to be left uncompleted would leave the United States in a disadvantaged position in the Indo-Pacific?

Mr. OWENS. Absolutely, I do.

Mr. MOYLAN. You gave a really good statement in your report here, which I read through. Do us a favor, just highlight this a little bit for me just about a minute or two.

Mr. OWENS. I would be happy to. And I really appreciate you enabling us to talk about this a little bit more, because it is a critical—a critical aspect. The construction workforce to do all of the work, the MILCON work that needs to happen on Guam to support the posture that we need in the Indo-Pacific does not exist. And try as we have over the course of the last several years to bring U.S. workforce to Guam to satisfy that construction need, we have been unable to meet that need.

So as we increase the amount of MILCON that needs to happen, we are at risk for construction contracts being—labor, particularly, aspects of construction contracts not being available to keep on schedule and on budget. So the extension that would—that we are asking for in our legislative proposition would solve that problem for Guam and for the Indo-Pacific. And I would say that we are going to continue all the efforts that we have been doing to encourage U.S. workforce to get to Guam and do this work. But absent that, we need certainty so that we can be able to deliver these projects on time and on budget.

Mr. MOYLAN. All right. Thank you, sir. And that has been—

Mr. OWENS. Thank you for letting me speechify. Thank you.

Mr. MOYLAN. So all our efforts there and all our communications with INDOPACOM [U.S. Indo-Pacific Command] generals is basically this needs to be done. And that it can be done with the continued extension of the H-2B. So I appreciate your support in continuing to push that. That is about just it for me. But Mr. Oshiba, I am looking forward to visiting you—your visit to Guam again. So I appreciate it. Thank you.

Mr. OSHIBA. Thank you, sir.

Mr. STRONG. Ms. Escobar of Texas is recognized for 5 minutes.

Ms. ESCOBAR. Thank you, Mr. Chairman. And many thanks to our witnesses today. I really appreciate your service to our country and your time with our subcommittee.

I have the privilege of representing Fort Bliss. Actually, I share Fort Bliss with my colleague, Gabe Vasquez, which is the second largest installation in our country as well as the largest joint mobilization force generation installation. And I recently had the opportunity to see the 3D printed barracks on Fort Bliss and was very impressed with what is happening there.

And so, Ms. Jacobson, I have a question for you about that. I am wondering if you can give us an overview of what kind of facility construction this technology could potentially be used for going forward to meet the Army's infrastructure needs? And what are some creative ways we can transport this technology on deployments for our service members stationed abroad?

Ms. JACOBSON. Congresswoman Escobar, it is very nice to see you again. So and—

Ms. ESCOBAR. Likewise.

Ms. JACOBSON. Thank you so much for all of your support of Fort Bliss. It is greatly appreciated. The 3D barracks is an interesting and a novel approach to construction. I know General Daley is a big fan of it and talks about it all the time. And we are looking at ways, especially in contingency basing, where we can use this type of construction, which is very fast and very efficient. And I promise to get with the Corps of Engineers and talk about how they can come up with sort of a proposal for how we can increase our use of 3D printing both at installations, at contingency bases as well.

Ms. ESCOBAR. Wonderful. Thank you. I look forward to that. I have a couple more questions about Fort Bliss. In your testimony, you mentioned that the Army is administering an Installation Climate Resilience Plan [ICRP] assessment for Fort Bliss. Can you give me some detail on when you expect that assessment to be completed? How can we on the Armed Services Readiness Subcommittee help complement the Department of the Army's efforts to shore up the state of our installations, based on the findings of these assessments?

Ms. JACOBSON. Well, thank you so much for that question. These assessments called these ICRP, two of them have been completed so far at Fort Carson, and at Anniston. And they are really comprehensive and directed specifically to bases based on regional environmental conditions. They are ecosystem driven. And so the notion is to put together those bases that are essentially the same ecosystem, so we can very specifically target what are the climate-associated risks based on that ecosystem.

So in the next group of these assessments that we are doing will be Fort Bliss and Fort Hood. And part of what comes out of these recommendation are suites of projects where we can enhance base resilience based on what we learn comprehensively about the risks associated with changing weather and other environmental conditions in that region. So Bliss and Hood are in the next group. And if there is specific recommendations for projects, we would be happy to report back to you about that.

Ms. ESCOBAR. I appreciate that. And do you have any idea of the timeline for that, when that next group might—the assessment might begin for that next group?

Ms. JACOBSON. I can find out specifically the timeline and get back with you about that.

Ms. ESCOBAR. Okay. That would be great. Thank you. And, also, I am wondering if the Army EI&E [Energy, Installations, and Environment] office is tracking a couple of priorities for Fort Bliss that have been on our radar. The need for more barracks, but also the rail spur. And are there plans to request MILCON funding for these projects?

Ms. JACOBSON. Well, I am happy to report for the Fort Bliss barracks projects, we have five modernization projects programmed for fiscal years 2024 to 2028. That will be an investment of over \$187 million. With respect to the railhead, we appreciate the extreme importance of the railhead to mission readiness and power projec-

tion. And I visited the railhead. I know that it needs improvement, substantial improvement. The railhead design wasn't enough—at an efficient-enough stage to make it into the last round of proposed military construction projects, but it is a very top priority. And the Corps knows that the design of 35 percent must be complete, and we will make sure it is for the next round.

Ms. ESCOBAR. Perfect. And I will be sure to keep on everyone about that as well. Thank you so much. I yield back.

Ms. JACOBSON. Thank you.

Mr. WALTZ [presiding]. Thank you, Ms. Escobar. Mrs. Kiggans.

Mrs. KIGGANS. Thank you, Mr. Chair. I just want to take a few minutes to talk about privatized or unaccompanied soldier, sailor housing.

So I represent Virginia's Second Congressional District down in the Hampton Roads area. And although we lost Norfolk Naval Base with redistricting, it is still very close. And we are home to the largest fleet on the Atlantic Coast. And I have the master jet base Oceana in my district.

So, housing there is atrocious. As a Navy veteran, I was a Navy wife for 20 years, you know, I go on base all the time. I shop at the commissary. I see where those guys live. And the quality-of-life aspect, we talk about that, and I know recruitment and retention is down. And, I mean, not only is housing a social determinant of health for people, but if we don't offer and at least get that quality-of-life piece back, we are never going to improve our numbers. And we talked to the leadership over at Oceana, specifically. Those guys are—there is three condemned enlisted barracks. There is no privatized housing on base; or there is only one at Norfolk. We are charging our enlisted sailors for WiFi usage. I could not believe the WiFi plans range from \$50 to \$200.

The first weekend that I held office here, I brought my DC staff down to Virginia Beach, and I put them in my minivan, and we drove to Norfolk, and we drove to Oceana. And I said look at where we are asking our single sailors to live. Here is the barracks. Here is the galley. Now, think of any 4-year college or university you have been to lately, and think about how beautiful those places are. And think about what we are asking those kids in the same age ranges to do. I have been to college. I know what those guys are doing every night of the week. And think about what we are asking those 19- and 20- and 21-year-olds to do.

So if we don't prioritize that—so I hear you about all these other—and the energy project thing, specifically, if we are sacrificing quality of life like housing and barracks issues for things like energy projects, that is not the right place to prioritize. We are not going to have people to prioritize energy projects for if we don't focus on that first.

For me, as a nurse practitioner as well, suicide issues have been real in my district. Quality of life is absolutely impacted by where these guys and girls live. So we have got to do a better job for them. So I know there is alternatives out there. And listening to the discussion, thank you so much for your testimonies and briefs, but I am very interested in privatized housing. I know there is probably pros and cons. I think I know the pros. So I would be interested to hear some of the cons. And then also, is there a way

that we are prioritizing amongst the services? It seems like Army has made some progress. I think Navy, especially in my district, I feel like we are really behind the power curve down there for utilizing some of these public-private partnerships. But can you explain just kind of the order of how we are prioritizing who is getting these privatized barracks, and then also, if there are any major cons we should consider?

Mr. OWENS. I can tee this off. As part of the ASD(EI&E) [Assistant Secretary of Defense for Energy, Installations, and Environment] job, I am also the Department's chief housing officer. So I am responsible for working with and ensuring that the military departments exercise their oversight authority with respect to MHPI [Military Housing Privatization Initiative] projects. And I think that there is progress that has been made. So the tenant bill of rights a couple of years ago, the fact that we have hired several hundred housing oversight personnel to be in installations and work. But there definitely is, as you have noted, work left to do.

So the commitment that we have to ensuring that our service members and their families have places to live that are—respect the dignity of the work that they are doing is something that we are all committed to. It is a critical readiness issue because of the health. And if I wrote this down right, your reference to the social determinant of health is something that is right up my alley. I would love to talk more about that with you if we get a chance, because there are aspects of this that we can focus on. In terms of prioritization, I will turn to my colleagues to let that be something they can speak to.

Ms. BERGER. And, Congresswoman, it is nice to see you. And thank you for your focus on quality of life in a place that it is very important to our sailors. As you note, there are barracks in disrepair. There is an example, though, of what is a great authority that we have been excited to have which is the privatized barracks. I will get back to you on how we prioritize those. But that is something that we are looking to do more of within those authorities. And your district is one of those places.

And on your note on wireless, I recently learned that, too, and it is top of my list to fix because I understand the connectivity and the mental health that can come from making a simple change.

Mrs. KIGGANS. Thank you very much. Thank you. And real quick, any cons to privatized housing that we should be considering when we are requesting, or is it as good as it sounds and seems.

Ms. BERGER. From our perspective, it has been a very good experience. And we would love to see more of the opportunity to use the authority.

Mrs. KIGGANS. Great. Thank you so much.

Mr. WALTZ. Mrs. Kiggans, I am going to extend your time a minute because I want to give the Army an opportunity—not from an Army-Navy standpoint—but the Army has been moving out on this issue, particularly when it comes to the BOQs [bachelor officers' quarters], the apartment-type complexes. And I would like to give Ms. Jacobson a minute.

Mrs. KIGGANS. Yeah, and if I could [inaudible] in, too—I would concur. It is painful for me to say, but yes, I think the Army is

really blowing some of the other branches out of the water, especially on some of those privatized lodging. So good job.

Mr. WALTZ. We have that on the record, Mrs. Kiggans.

Ms. JACOBSON. Feel free to elaborate, Congresswoman. Thank you. We really appreciate that. Obviously, this is very important to us, as you say, for quality-of-life purposes.

On the privatized housing side, we have been very vigilant. We have had some issues, but we are exercising controls now, and a lot of oversight. And we have done investigations. We are doing audits. We are on top of it in terms of oversight of housing providers, where there are negatives associated with that.

With respect to privatized barracks, we are considering this very, very carefully. We have commissioned a RAND study to give us some of the pros and cons and do a deep dive. And at the same time, we are right now looking at two proposals from our housing providers about how they would address privatized barracks. We have a great situation at Meade—I think it is at Meade, I am sorry—and where it is working. But, of course, it is for more senior single soldiers. The question is, how do you ensure continuity of leadership and unit continuity? How do you make sure that leaders have access to the barracks? How do you basically—unit cohesion is critical there and making sure that leaders have access to those barracks for a whole suite of reasons. So we are examining it very carefully and expect to make some decisions this year.

Mrs. KIGGANS. Good. And that should be a priority as well. Thank you for that. I know on Norfolk Naval Base, with the ship deployment schedules, they were housing those guys just in empty barracks rooms. So there was no unit cohesion. It was very difficult for our enlisted leadership to be checking in on those guys. They were scattered amongst—if you have ever been to Norfolk Naval Base—a lot of acres. So being able to house them together, yes, for unit cohesion, to be able to provide just some positive activities and things for them to do would be so meaningful for quality of life. So thank you.

Mr. WALTZ. Thank you. And to that end, Mrs. Kiggans, we are going to request the Department come back for a more detailed briefing and really diving into where the services are going, what the commonalities are from OSD's [Office of the Secretary of Defense's] perspective, where you are prioritizing. And, hopefully, what we will get out of that is some cross-service lessons learned and areas to sustain and areas to improve, and really what the trajectory is going forward. You know, a colleague of Mr. Garamendi's from—a well-known colleague of Mr. Garamendi's from California once said: Show me your budget, and you'd show her your priorities. And it seems year after year, FYDP [Future Years Defense Program] after FYDP, installations management and these quality-of-life issues seem to somehow fall to the bottom of a very competitive budget process.

So if I am wrong in that, I look forward to you disabusing me, and if—otherwise, then, we look forward—I know on this subcommittee it is a priority for all of us to figure out how to help you on that. Because we can throw millions and millions at retention bonuses and specialty pays and what have you, but having a de-

cent, safe, quality-of-life place for our soldiers, sailors, airmen, Marines, and guardians to live is of the utmost importance.

I think with that—anything else from our ranking member?

Mr. GARAMENDI. Well, you have done well first time out, Mr. Chairman. Thank you.

Mr. WALTZ. You know, in the Special Forces, that is I owe you a case of beer. Well, thank you. The hearing's adjourned.

[Whereupon, at 4:18 p.m., the subcommittee was adjourned.]

A P P E N D I X

FEBRUARY 28, 2023

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

FEBRUARY 28, 2023

Statement of the Honorable John Garamendi
Ranking Member, Readiness Subcommittee
“Energy, Installations, and Environment Programs”
February 28, 2023

Thank you, Mike. I'd like to take the opportunity during this first Readiness Subcommittee hearing to congratulate you on your Chairmanship. I certainly found our partnership productive during the last congress, and I look forward to continuing to work together this congress on the many readiness challenges we face. I would also like to welcome our new members on both sides of the aisle. The jurisdiction of this subcommittee is broad and impactful both broadly and within each of our districts. None of these issues are easy and I look forward to working with all of you this year to continue our positive progress on readiness matters.

I've heard many of today's witnesses testify in previous years about topics we will cover again today. Much of this discussion will no doubt center on the vital importance of the Department's infrastructure – how the shipyards, depots, and installations are the bedrock of warfighting readiness. But words only go so far. Time and again we have failed to see this importance reflected in the main expression of the Department's priorities, the President's Budget Request.

The Department has time and again taken risk in infrastructure and when we need the capacity at our depots to produce munitions or drydocks to fix our submarines, we realize that there are gaps where we should have been investment. This has been an issue across many administrations, and so I will continue to push the Department to make infrastructure investment a priority.

In the last two National Defense Authorizations, it was this subcommittee that forced more investment in quality-of-life infrastructure such as barracks, dormitories, and child development centers. For years we have applied pressure to the military departments to develop and execute meaningful plans to modernize and optimize the nation's maintenance depots and shipyards. Last congress we addressed the neglect of the country's research, development, test and evaluation infrastructure, creating a new authority modeled after the highly successful ERCIP program to raise the profile of this vital yet ignored category of infrastructure.

Over time, you have shown us that you are comfortable with taking risk so you can invest in the new and shiny - We are not. So today, I wish to focus on what each of you is currently doing, not aspiring to do, to correct the chronic and decades long failure of the military departments to adequately invest in its infrastructure. Two recent examples show what happens when hope is your installation readiness strategy. For years, we've known about the seismic risk that could impact the dry docks at Puget Sound Naval Shipyard, yet there was no programmed recapitalization across the future year defense plan nor was it a priority in the Navy's shipyard infrastructure optimization plans. I question the methodology each of you uses in assessing risk, and prioritizing investment.

We've had several enormous bills in the last few years, hurricane recovery at Tyndall Air Force Base, remediation due to catastrophic failures at Red Hill, earthquake disaster relief at China Lake. What these installations have in common is the knowing acceptance of risk in the form of deferred maintenance and recapitalization that lead to billions in unplanned construction and renovation.

My second example is closer to home. Since 2018 land around Travis Air Force base has been purchased, often above fair market value, by a private entity. What was suspicion has now become an encroachment issue. And, it seems that the DOD does not have adequate safeguards in place to ensure that threats to our domestic installations are elevated to the appropriate levels for action. I know this, because the encroachment around Travis came as a surprise to both Headquarters Air Force and the Department of Defense, four years in to the acquisition of land around the installation. How is this possible? Hope is not a strategy. If you aren't watching out for our installations, who is? You are responsible for ensuring that installations are resilient to all threats - whether seismic, climate, cyber, energy or encroachment.

You are responsible for fighting for the investments in our infrastructure and for ensuring that you are using every authority you have been granted to maximize readiness at the nation's installations. Today I want to hear specifics about what each of YOU are doing to improve these chronic problems and how you are maximizing the use of the authorities you have been granted. Over the last few year's congressional intent in these areas has been clear, I look forward to hearing over the next two hours how you are executing that intent.

With that, I yield back Chairman Waltz.

HOLD UNTIL RELEASED
BY THE COMMITTEE

**Statement of
The Honorable Brendan Owens
Assistant Secretary of Defense
(Energy, Installations & Environment)**

**Before the House Committee on Armed Services
Subcommittee on Readiness**

**Department of Defense
Energy, Installations & Environment Programs**

February 28, 2023

INTRODUCTION

Chairman Waltz, Ranking Member Garamendi, and distinguished members of the Subcommittee: Thank you for the opportunity to discuss the Department of Defense's (DoD) energy, installations, and environment programs. As the newly confirmed Assistant Secretary of Defense for Energy, Installations & Environment (EI&E), I am grateful to be able to serve the people who safeguard this nation and ensure they have safe, healthy, efficient, and resilient places to live and work. Our installations are the foundations of our national security posture, and I look forward with this committee in the coming months to continue aligning our policies and resources to support the National Defense Strategy.

SUPPORTING THE NATIONAL DEFENSE STRATEGY

The 2022 National Defense Strategy (NDS) recognizes that the global threat environment is becoming increasingly complex, characterized by significant geopolitical, technological, economic, and environmental change. The People's Republic of China (PRC) remains the Department's pacing challenge with its increasingly aggressive efforts to undermine U.S. alliances and security partnerships in the Indo-Pacific region. However, we also face threats from actors like Russia, North Korea, and Iran, as well as climate change and other transboundary challenges. Together, these threats not only pressure the Joint Force's power projection and maneuver capabilities, but also put the safety and security of the homeland at risk.

To address these challenges, the NDS identifies four top-level defense priorities: defend the homeland; deter strategic attacks against the United States, our Allies, and our partners; deter aggression and be prepared to prevail in conflict when necessary; and build a resilient Joint Force and defense ecosystem.

Each mission within our energy, installations, and environmental portfolio is directly engaged in the successful execution of this strategy. Our over 500 bases, posts, camps, stations, yards, and centers around the world are the vital network of mission support capabilities that form the backbone of an integrated deterrence posture that is both resilient enough to withstand, fight through, and recover quickly from disruption, and adaptable enough to apply deterrence approaches that can be tailored to address specific challenges. We continue to ensure that the missions being conducted under the Department's campaigning initiatives are supported by reliable and secure fuel and energy, whether they are out in the field or on base. Finally, by effectively managing both the built and natural environment and ensuring that our warfighters have access to the land, water, and airspace they need to maintain their readiness, while also protecting their health and safety, we are building the enduring advantage needed to advance our defense and security goals.

The continued support of Congress, and in particular, this subcommittee, has allowed the Department to enhance the agility, resilience, readiness, and lethality of our forces around the world. There are several key priorities and progress updates that I would like to focus on today, including our ongoing efforts to optimize our posture in the Indo-Pacific region, the progress

we've made to improve the resilience of our Joint Force, and the updates on our environmental cleanup and housing programs.

SUPPORTING THE DEPARTMENT'S POSTURE IN THE INDO-PACIFIC REGION

As noted in the 2022 National Defense Strategy, the PRC is "the most comprehensive and serious challenge to U.S. national security" and that meeting this challenge will require a holistic response centered on an integrated deterrence posture in the Indo-Pacific region. The Department continues to strengthen and sustain the distributed, resilient capabilities needed achieve this posture and counter the PRC's increasingly coercive and aggressive actions in the Indo-Pacific. We recognize that this must be done in close cooperation with our allies, partners, and other stakeholders. As such, EI&E is focusing on two critical priorities that will be critical to our Indo-Pacific posture: retaining training lands in Hawaii and addressing workforce challenges affecting the military construction work in Guam and the Commonwealth of the Northern Mariana Islands (CNMI). We look forward to working with the State of Hawaii, Guam, the CNMI, and our DoD and other Federal partners to ensure that these priorities can be addressed.

Retention of Critical Training Land in Hawaii

The relationship between the U.S. Military and Hawaii has been a critical piece of U.S. military and diplomatic strategy for over 125 years. Hawaii's strategic location in the Pacific, its unique training and port areas, and its support for critical defense missions makes it a cornerstone of our posture in the Indo-Pacific region. In support of this vital defense mission, the Military Departments lease approximately 72,000 acres of land across five islands in the chain. These lands, which are adjacent to U.S.-owned installations, provide ideal locations for specialized defense capabilities, multi-domain operating areas to generate future force readiness, and training ranges that our Joint Force leverages along with allies and partners.

The Department recognizes that recent incidents, particularly the fuel and concentrated Aqueous Film Forming Foam (AFFF) spills at Red Hill and the diesel spill at the Maui Space Surveillance Complex, have resulted in a severe and worsening loss of public trust between the DoD and Hawaii's people. This situation presents extremely challenging conditions for DoD negotiations with the State to retain use of these leased lands, and it is anticipated that senior DoD leadership will need to engage consistently, respectfully, and transparently to repair relationships and build back trust. The Department is working diligently to improve relationships and communicate effectively with stakeholders (state and local government, Native Hawaiian organizations, and other interest groups).

The partnerships and relationships that enable the continuation of the critical military missions in Hawaii are vital to the U.S. military strategy in the Pacific and our national strategy to promote stability in the region. The leases for approximately 44,000 acres of state land will expire within 10 years. The Military Departments are seeking to negotiate new property agreements for 22 separate parcels, including training areas, main cantonments and support areas, and easements (including ocean area) prior to their expiration in 2028, 2029, and 2030. The expected timeline for reaching new property agreements, which will require lengthy and robust environmental

compliance and real estate due diligence is 5-7 years. Through consistent, public actions that support and benefit both the military and State of Hawaii, the Department will endeavor to build relationships and set the right conditions today to enable productive future negotiations.

Construction Workforce Issues in the Indo-Pacific Region

The Department has several upcoming key posture actions in Guam and the CNMI that will require historic levels of military construction, including the relocation of Marines from Okinawa, Missile Defense Agency Defense of Guam, and Polaris Point expansion. However, while Guam ranks 3rd highest nationally in construction workforce per capita, the current military construction demands require a workforce more than twice as large as the local construction workforce (currently ~4,400 people). The anticipated levels of future military construction will further exacerbate consistent labor shortages that have already left private construction projects unable to meet their baseline needs. To deliver these critical military construction projects on time, the local workforce must be augmented. Despite concerted and sustained efforts by the Guam Department of Labor and DoD, construction opportunities in this region have never been able to attract a sufficient number of U.S. workers to Guam and the CNMI to support construction requirements. The only reliable mechanism available to DoD to sufficiently augment the construction workforce on Guam and CNMI is the H-2B visas program.

To ensure that DoD construction contractors have a stable H-2B visa workforce for the military realignment projects described above, DoD requires relief through December 31, 2029, from the H-2B visa temporary need requirement. While we appreciate the one-year extension in the Fiscal Year 2023 National Defense Authorization Act (NDAA) that pushed the expiration date to December 31, 2024, the longer-term extension is needed to meet DoD's construction requirements.

Current construction cost estimates and schedule commitments in Guam and the CNMI are based on and require a stable labor market throughout construction. The construction contracts are typically over two years in duration and in certain cases are much longer. These contracts are typically firm-fixed price contracts which require the contractor to make assumptions based on availability of resources (labor, construction materials, etc.). They may also choose not to compete for the project if the risk is too high for them to successfully complete a project. Continued short-term exemption extensions of exemption from the temporary need requirement for a H-2B visa does not resolve the uncertainty around the availability of labor and leaves the risk of annual labor market disruption intact. Heightened contractor risk will drive bid and cost increases and result in schedule delays. Labor market uncertainty will, at a minimum, significantly delay and potentially block DoD's ability to meet force posture requirements in Guam and the CNMI. The Department looks forward to working with Congress to prevent this contingency and keep currently programmed and near-term planned projects on track.

IMPROVING MISSION RESILIENCE

A key pillar of the National Defense Strategy is to build a resilient Joint Force and defense ecosystem that can operate in a contested environment at home and abroad. As such, we must

work to ensure our energy, installations, and infrastructure are resilient to a wide range of challenges, to include weather, climate, natural events, disruptions to energy or water supplies, and physical or cyber attacks. The Department requires a multi-faceted approach consisting of policy adjustments; better planning, design, and construction; and innovative technology to counter such a diverse set of threats.

Infrastructure Resilience

The Department is improving mission resilience at the building and installation level by developing policy that establishes stringent energy performance goals in new and existing buildings and enables them to run on electricity. My office is working with DoD components to leverage the Department's facility data to inform infrastructure recapitalization decisions and ensure Components have the tools necessary to prioritize building upgrades for a secure energy future. We are updating all Unified Facilities Criteria to dramatically improve the energy performance of newly-constructed buildings, support electric building systems and components to increase mission resilience and integrate effectively within an installation micro-grid. These actions add capability, ensuring installations can operate under all conditions and expanding options for providing support to civilian authorities and local communities. Finally, the Department is pursuing a comprehensive plan and associated investments to deploy the charging infrastructure essential to transition our non-tactical vehicle fleet to electric power enabling installations to further leverage our investments in micro-grids. The Department aims to have this vehicle transition complete by 2035.

Military Construction

Infrastructure resilience is integrated into the military construction (MILCON) program, where we continue to focus on critical mission requirements as well as life, health, and safety concerns. These efforts directly support operations, training, maintenance, production, along with projects that take care of our people and their families, such as medical treatment facilities, unaccompanied personnel housing, and schools.

Our focus continues to be on developing projects that are appropriately scoped and priced to ensure execution is on-time and within cost. The primary emphasis of the Department's Military Construction Reform initiative is on early involvement between project sponsors and the DoD Construction Agents (DCAs) responsible for executing the projects. In addition, we are working with the DCAs and industry to introduce their knowledge and expertise earlier into our project planning and design activities to ensure executable projects. We are close to finalizing a comprehensive policy associated with the planning and design of military construction projects. This policy will ensure that all DoD Components clearly understand the difference between planning activities and design activities to consistently apply the appropriate funding to each task. Additionally, DoD is focusing on sharing information between key project stakeholders, ensuring that critical details such as project requirements, acquisition timelines, and construction status inform proactive decisions on projects. This enhanced information sharing will allow project stakeholders to manage scope and cost changes with minimal impact to project delivery.

The Department recognizes the challenges associated with estimating and awarding military construction projects on budget, particularly given recent supply chain tightening and significant material price increases. We appreciate the additional support Congress has provided over the last few fiscal years to ensure that authorized project costs are better positioned based on market realities. However, the Department acknowledges that it has work to do to ensure that estimates result in executable projects. This year we are also making sure an appropriate level of resourcing is provided to the DCAs so they can provide improved oversight of our construction contracts.

Facilities Sustainment, Restoration, and Modernization

The Department's inventory of buildings and structures is the largest within the federal portfolio. Facilities Sustainment provides for the regularly scheduled maintenance, repair, or replacement of facility components and directly influences the condition of our facilities. These investments must be made throughout the service life of a facility to optimize its performance and support the safety, productivity, and quality of life of our personnel, while also reducing avoidable costs associated with premature deterioration. In addition to facilities sustainment funding, the Department relies upon its Restoration and Modernization program funding to provide ongoing support to reduce our maintenance and repair backlog and to modify our facilities to support improvements in our technologically driven functions.

Currently, the Department has managed the budgeting for sustainment of assets at the portfolio level with a sustainment model. This model, however, relies on an inventory approach to requirements development, which does not directly align asset investment requirements to expenditures. In implementing its Sustainment Management System (SMS), the Department has moved closer toward instituting an asset management approach to facility management. Our next step will be to improve data driven asset management by developing a facility investment optimization model for the Department that will optimize the allocation of facility repair funding to maximize the condition of our facilities. This initiative is just beginning, but we anticipate the tool will be able to promote more efficient facility investments and detail the mission benefits achieved based on the investments. Unlike our current sustainment model, this tool will consider the asset's condition, the asset's individual system components, and the mission contribution of the asset. This initiative is guiding our transition into an asset management approach for budgeting and managing the Department's inventory more holistically. It will also provide much needed data in the building component systems and their maintenance and recapitalization schedules to properly conduct sustainment, which will reduce energy demand. The additional data will also allow the Department to better plan future electrification modernization of the built infrastructure, consistent with our energy resilience goals.

Energy Resilience and Conservation Investment Program (ERCIP)

In 2021, the ERCIP program became a specified MILCON program focused on improving the energy resiliency of our installations with an emphasis on critical missions. Today, ERCIP is the backbone of our energy and water resilience investments. It prioritizes energy project investments where they best support the defense posture, with a focus on microgrids, backup generation, and energy storage. In addition, ERCIP will continue to support a range of

technologies and efforts, including renewable energy, energy storage, geothermal, accelerated deployment of air and ground source heat pumps, and infrastructure projects directly supporting distribution infrastructure for electrical vehicle charging stations. The Department appreciates the support Congress has provided to the ERCIP as it evolved from a conservation-focused program to one that emphasizes resilience.

Energy Resilience

Reliable, flexible, and resilient energy access remains essential to military capability and readiness. The Department depends on energy-resilient forces, weapon systems, installations, and infrastructure to achieve its mission, at home and abroad. While our installations utilize commercial, municipal, and host nation power and energy grids for day-to-day operations (including command and control systems, communications, lighting, heating, and cooling), as a readiness matter, we also must have credible and resilient localized installation energy capabilities that can deter, defend against, and help defeat adversarial actions. Similarly, for operational energy uses--most notably combat platforms--the Department relies on organic capabilities as well as commercial partners to provide fuel and energy to globally deployed forces. Our potential adversaries understand the essential nature of energy, and seek to degrade, delay, or deny the Department's ability to access energy at-will, reducing our readiness and deterrence posture. In response to these threats and in alignment with statute, the Department shall "ensure readiness of the armed forces for their military missions by pursuing energy security and energy resilience" (10 U.S.C. §2911) and "ensure the types, availability, and use of operational energy promote the readiness of the armed forces" (10 U.S.C. § 2926).

The President and the Secretary of Defense have directed the Department to ensure installations and forces are resilient to all hazard risks – kinetic, cyber, and natural – and that the use of energy promotes the readiness of the armed forces for their military missions. In response, the Department is making significant energy investments in both operational energy (the energy required for training, moving, and sustaining military forces and weapons platforms for military operations) and installation energy (the energy used to power permanent installations and non-tactical fleet vehicles). Enhancing energy resilience and reducing energy demand are essential to achieving Joint lethality, supporting distributed operations, and reducing risks to sustainment in contested environments.

The Department continues to invest resources in planning, research and technology development, and acquisition to promote and improve the readiness of our armed forces against pacing threats through energy awareness, energy demand reduction, energy security, and energy resilience. In doing so, the Department often engages with local communities to gain synergies across connected systems, whether energy, water, transportation or communications.

The Department also is adapting its capability development processes to better align with the challenges of contested logistics and distributed, austere operations. In April 2022, the Deputy Secretary of Defense directed that the "Department's capability development activities, from requirements to acquisition to sustainment, must increase energy supportability and must reduce energy demand across all capability solutions." In response, the Military Departments and USD(A&S) are adapting decision-making to ensure that requirements for new capabilities are

informed by contested logistics and that these requirements are supported in program decision-making.

Innovation

Making the right investments in energy and environment innovations expands the Department's operational energy capabilities, reduces fuel burden in an era of contested logistics, keeps trust with the American people and preserves vital training lands. The Department runs two, related innovation programs. For installations, the Strategic Environmental Research and Development Program (SERDP) and the Environmental Security Technology Certification Program (ESTCP) make needed investments in land and species conservation to preserve access to training areas, cleanup past hazards such as munitions and PFAS, and develop energy efficiency and energy resilience solutions for DoD installations. The Operational Energy Capability Improvement Fund (OECIF), and the Operational Energy Prototyping Fund (OEPF) are the Department's only joint research efforts dedicated to developing operational energy solutions for the joint force. OECIF/OEPF invest in a range of technologies, from hybrid electric tactical vehicles that provide silent overwatch and low-signature capabilities, to blended wing body aircraft that have a fuel savings improvement of over 30% as compared to traditional aircraft and highly efficient solar cells to extend the flight time of UAVs.

Environmental Resilience

The reality of a changing climate poses a range of risks to Department readiness and threatens installation resilience through drought, dangerous heat, flooding, wildland fire, and extreme weather. The impact of these risks adversely impact training, soldier welfare, equipment performance and place and added strain on the Department's resources. The 2022 National Security Strategy recognizes climate change as a strategic challenge that is transforming the context in which the Department operates. Recognizing this Department has undertaken a range of climate measures as part of an "all-hazards" approach to installation planning. Using the DoD Climate Assessment Tool, as required in multiple NDAA's, we identify actions needed to ensure the continuity of missions at (or deploying from) our installations and incorporate those actions into installation master plans, installation resilience plans, installation energy and water plans, and construction projects. These assessment processes have now expanded to inform Department operational planning considerations for forces and equipment and wargaming scenarios. Additionally, DoD's approach to climate risk assessment has been shared with, and is being utilized by Federal interagency partners, as well as allied nations.

The Department is undertaking a range of measures that both improve and expand operational capabilities and resilience while also reducing greenhouse gas emissions (GHG). These efforts include a range of efficiency measures that reduce energy demand for operational platforms and installations such as winglets on large aircraft and highly efficient heat pumps in buildings. The Department is also deploying a range of flexible and alternative fuels technologies and electrifying tactical and non-tactical mobile platforms to reduce costs and add capability. Specific attention is being given to deploying tactical micro-grids at the operational level, as well as micro-grid technologies at installations to add resilience to key mission requirements and enhance mission assurance. The Department, in concert with other agencies such as DoE,

continues to invest in researching new technologies that promise to reduce vulnerabilities, expand environmental protections, add operational capabilities, and reduce GHG emissions.

Environmental Conservation and Compatible Development

DoD lands contain significant resources supporting our nation's natural and cultural heritage, including resources important to American Indian, Alaskan Natives, and Native Hawaiian Organizations. DoD lands provide habitats for over 500 plant and animal species that are federally protected under the Endangered Species Act and contain over 130,000 recorded archaeological sites, and 45 National Historic Landmarks. Our conservation program allows us to manage these resources in compliance with applicable Federal statutes and manage for healthy and resilient natural landscapes to reduce climate driven risks such as flooding and wildfire.

DoD has a long track record of balancing conservation of threatened and endangered species while continuing to support evolving mission needs requiring optimal use of our existing ranges and training areas and developing other supporting infrastructure. DoD investments in conservation are making significant progress towards alleviating these restrictions by promoting species recovery. Through the Recovery and Sustainment Partnership (RASP) with the Department of the Interior and US Fish and Wildlife Service, DoD has worked to identify priority species and conservation actions, resulting in significant improvements to species recovery and conservation, regulatory efficiencies, and mission flexibility. In recognition of the Department's commitment to conservation, five species occurring on San Clemente Island, CA were removed from the protections of the Endangered Species Act on January 24 of this year due to the successes of the US Navy recovering these species from the brink of extinction. This is a win for both the Navy and species, and other such successes are on the horizon. We will continue to work with our Federal, state and non-governmental partners through the DoD Legacy Resource Management Program to build on these successes and contribute, as appropriate, to the priorities of the Administration's Restoring American the Beautiful Initiative.

In the next two decades, approximately 80% of the current DoD building inventory will reach 50 years of age and need to be evaluated for listing on the National Register of Historic Places. To manage the aging real property assets on installations, DoD is engaging with the Advisory Council on Historic Preservation to develop new nationwide programmatic solutions to streamline compliance responsibilities for specific categories of buildings. Such programmatic agreements reduce the time and cost of consultation as well as costs for repairs, renovations, and demolition of buildings (if needed). Absent such agreements, the Department's managerial and financial costs of complying with a variety of preservation laws will increase exponentially, diverting funds from base operations and MILCON.

Continued investments in conservation will maximize our flexibility to use our land, water, and airspace for military purposes and to address incompatible land uses beyond our fence lines and will ensure that our military and civilian personnel have the access they need to conduct mission-essential activities. Strategies to address these conservation and climate adaptation priorities can be most effective through landscape-scale initiatives to better capitalize on both our on-installation conservation programs and our off-installation conservation partnerships through the Readiness and Environmental Protection Integration (REPI) Program.

Readiness and Environmental Protection Integration (REPI) Program

The REPI Program safeguards military missions by improving installation resilience to extreme weather events and climactic changes, promoting compatible land use, and preserving critical habitats and natural resources near DOD installations and ranges. REPI is uniquely positioned to support DOD's ability to operate seamlessly across domains by stimulating mutually beneficial and cost-effective partnerships between local communities, Federal and state agencies, and non-governmental organizations. Through Fiscal Year 2022, the REPI Program has helped attract over \$1.1 billion in non-DOD partner contributions – nearly doubling DOD's investment – to protect over 1.1 million acres of land that is sustaining military mission at 120 installations in 35 states and territories.

Over the past year, the REPI Program has expanded project planning capacity and execution of projects in the Indo-Pacific region that promote installation resilience and is expanding innovative partnerships that support mission capabilities and enhance resource conservation and community benefits. For example, in Hawaii, the REPI Program invested over \$21 million in FY 2022 to address watershed health, mitigate climate risks, and preserve agriculture and culturally significant parcels, and will invest over \$26 million on similar Hawaiian partnership efforts in FY 2023.

The REPI Program also continues to support the interagency Sentinel Landscapes Partnership between DoD, the U.S. Department of Agriculture (USDA), and the U.S. Department of the Interior (DoI). The Partnership promotes shared land use priorities and works to advance conservation outcomes in landscapes across the country where national defense, sustainable agriculture and forestry, and community resilience to climate change intersect. Through FY 2021, DoD has led collaborative efforts with Federal, state, local, and private partners across ten Sentinel Landscapes to permanently protect over 610,000 acres of land and implement sustainable management practices on an additional 3.1 million acres. DoD continues to support the designation of new Sentinel Landscapes. For example, the REPI Program has joined with the Trust for Public Land in Hawaii to support a potential future Hawaii Sentinel Landscape designation.

The REPI Program has been identified in DoD's Climate Adaptation Plan as one of the key tools the Department will use to create resilient natural infrastructure solutions near installations and enhance climate adaptation. Through the National Fish and Wildlife Foundation's 2022 National Coastal Resilience Fund, the REPI Program contributed \$15 million to advance seven natural infrastructure projects that benefit DOD installations and ranges. These projects leverage significant additional funding from the National Oceanic and Atmospheric Administration and other partners to accelerate project outcomes that defend national security, maximize taxpayer benefits, and support sustainable land management practices.

In addition to enhancing critical mission capabilities and promoting resilience, many REPI projects support community-based conservation, recreation, and other quality of life programs. For example, Fort Harrison in Montana has partnered with the Prickly Pear Land Trust to expand the nationally recognized Peaks to Creeks Initiative, a community-driven effort to expand public

access to the region's waterways, open spaces, and trail networks. DoD plans to expand these types of opportunities in FY 2023 by partnering with the National Parks Service Land and Water Conservation Fund on a new notice of funding opportunity to conserve lands that increase public access and recreation while promoting compatible land uses aligned with local military missions and requirements.

TAKING CARE OF OUR PEOPLE

The Department of Defense's people are its greatest strength, and we are committed to ensuring that they have safe, healthy, efficient, and resilient places to live and work. These places should enhance the health, well-being, and readiness of our Service members, their families, and the communities that support them. We recognize that this requires us to be good stewards of the environment and good neighbors and partners with the communities that support our installations. As such, the Department must ensure that it has a robust environmental cleanup program to address the effects of releases of hazardous substances, pollutants, or contaminants into the environment. The Department must also maintain safe and efficient facilities and improve the quality of life for our military personnel and their families by ensuring access to safe, quality, and affordable housing where they will want and choose to live.

Defense Environmental Restoration Program

The Department must take deliberate and sustained action to address risks to human health and the environment resulting from DoD activities. Our environmental cleanup program includes the Installation Restoration Program (IRP) and Military Munitions Response Program (MMRP). The IRP is focused on cleanup of hazardous substances, pollutants, and contaminants, while the MMRP is focused on responding to unexploded ordnance and munition constituents at former military ranges. These programs encompass active installations, Formerly Used Defense Sites (FUDS – sites that DoD transferred to other Federal agencies, states, local governments, or private landowners before October 17, 1986), and sites DoD transferred to other entities as part of its Base Realignment and Closure (BRAC) activities.

Progress Towards Cleanup Goals

To date, the Department, in cooperation with state agencies and the U.S. Environmental Protection Agency (EPA), has completed cleanup activities at 87 percent of Active and BRAC IRP and MMRP sites, and FUDS IRP sites, and is now monitoring the results. During FY2022 alone, the Department completed cleanup at 192 sites. Of the roughly 40,300 restoration sites, more than 34,200 are now in monitoring status or have completed cleanup.

Our focus remains on continuous improvement in the restoration program: minimizing overhead, adopting new technologies to reduce cost and accelerate cleanup, refining and standardizing our cost estimating, and improving our relationships with state regulators and affected communities through increased dialogue. These initiatives help ensure that we make the best use of our available resources to complete cleanup.

While the Department continues to make progress on completing cleanups, the remaining sites are some of the most complex cleanup sites. Chemicals of Emerging Concern and others like per- and polyfluoroalkyl substances (PFAS) continue to pose challenges for DoD's cleanup programs as new science requires reconsideration of previous decisions and more expensive solutions to protect our Service members, their families, communities, and the environment. Additionally, some complex sites have no feasible solution for cleanup and, as a result, the Department is making significant investments in environmental technology to identify new potential remediation methods.

Per- and Polyfluoroalkyl Substances

The presence of per- and polyfluoroalkyl substances (PFAS) in the environment is a national issue due to its wide-spread use in many industrial and consumer products. The Department recognizes the importance of this issue and is committed to addressing PFAS in a deliberative, holistic, and transparent manner. The Department established a PFAS Task Force in July 2019, and Congress codified it in statute last year. We are providing quarterly reports to you on the Task Force's activities. The Task Force continues to provide strategic leadership and direction on DoD-wide efforts, while focusing on four main goals:

- Mitigating and eliminating the use of the current aqueous film forming foam (AFFF);
- Fulfilling our cleanup responsibilities
- Understanding the impacts of PFAS on human health, and
- Expanding PFAS-related public outreach

In addition to these four focus areas, the Task Force has and continues to support substantial research efforts relating to PFAS and is establishing practices to ensure timely and complete dissemination of research findings and related data to the public.

Over the last year, the Department has made notable progress. For example:

- DoD has completed over half of its initial cleanup investigations for installations identified by the Department as locations where PFAS may have been used or potentially released.
- DoD has hosted several virtual PFAS public outreach meetings and is planning additional senior leader engagements, as well as site visits to impacted communities to gather input for more effective future outreach.
- DoD launched a new website that includes PFAS sampling results for drinking water taken in communities surrounding DoD installations.
- DoD's research and development efforts contributed to the development of a new Military Specification for a fluorine-free replacement to AFFF and have led to a total of 50 PFAS treatment technologies that have passed proof of concept and are further in development or the demonstration phase.
- The Military Departments are developing comprehensive plans for the transition to PFAS-free alternatives to AFFF and are evaluating available technologies, in addition to alternative foams, to replace AFFF systems in facilities.

AFFF Replacement Progress

Over the past few years, the Department has undertaken an aggressive initiative to develop and demonstrate PFAS-free alternatives for AFFF. A number of commercially-available and developmental PFAS-free alternative formulations have been demonstrated to achieve acceptable fire extinguishment performance. DoD has completed evaluations of the shelf life, materials compatibility, and general toxicity of these formulations and the Navy used these results to develop a new Military Specification – published January 12, 2023. The Military Departments are also evaluating available technologies, in addition to alternative foams, to replace current AFFF systems in facilities as part of the development of comprehensive plans detailing the transition to AFFF alternatives in both facilities and vehicles.

PFAS Cleanup and Drinking Water Mitigation

DoD follows the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the long-standing EPA regulations for all chemicals in our cleanup program, including PFAS. The Defense Environmental Restoration Program statute provides authorities to DoD to perform and fund cleanup actions and requires they be carried out in accordance with CERCLA.

As of December 31, 2022, the Department has completed the initial assessment at 405 (of 706) installations and of those, 101 were found to require no further action, while 304 are proceeding to the next step in the CERCLA process. During these initial assessments, DoD evaluates both groundwater and drinking water. If DoD identifies PFOS and/or PFOA from DoD activities in off-base drinking water above 70 parts per trillion, we quickly take action (i.e., a CERCLA removal action) to provide treatment or an alternative water source.

While the Department is making significant progress toward completing these initial assessments by December 2023, some additional work may be required as science develops and recommendations from our federal partners evolve. For example, in May 2022, EPA released new regional screening levels for certain PFAS. DoD is currently reevaluating several completed PA/SIs to assess if additional work is necessary based on these new values, which could affect DoD's timeline for completion.

The Department understands that the EPA is planning to propose a regulatory drinking water standard for certain PFAS under the Safe Drinking Water Act in early 2023. The Department looks forward to the clarity that a nationwide regulatory standard for PFOS and PFOA in drinking water will provide. In anticipation of this EPA drinking water regulation, and to account for emerging science that shows potential health effects from PFOS and PFOA at levels lower than 70 parts per trillion (ppt), the Department is evaluating its efforts to address PFAS in drinking water. This includes assessing what actions DoD can take to be prepared to incorporate EPA's future regulatory standard into our current cleanup process, such as reviewing our existing data and conducting additional sampling where necessary. In addition, DoD will incorporate nationwide PFAS cleanup guidance, issued by EPA and applicable to all owners and operators under CERCLA, as to when to provide alternate water when PFAS are present.

In addition, as part of our normal operations, the Department has sampled over 500 on-base DoD drinking water systems worldwide. Of those, we identified 37 with PFOS and/or PFOA above 70 ppt and took quick action to bring those systems below 70 ppt. Where DoD is the known source of PFOS and/or PFOA in drinking water, DoD has taken steps to ensure that no one is drinking water above 70 ppt.

PFAS Public Outreach

The Department is committed to expanding our outreach efforts as we continue to address PFAS. As the Chair of the PFAS Task Force, I will ensure that I am actively engaged in these efforts. DoD is developing an overarching PFAS communication strategy to include communication products that will explain DoD's cleanup activities in a comprehensible and transparent manner. These efforts will ensure a cohesive and collaborative approach to communication and messaging across DoD and drive consistent messaging across all communication platforms. DoD will also conduct community interviews and is finalizing locations to be visited this spring and summer.

Chemicals in the Defense Supply Chain

The pressure from expanding international and domestic emerging chemical regulations places an unknown risk to the Department's readiness. These new and evolving regulatory requirements, which can prohibit the manufacture and use of chemicals, may result in the loss of access to mission critical products. There are numerous chemicals under increased oversight including, but not limited to, hydrofluorocarbons (HFC), chlorinated solvents, and PFAS. As an example, some PFAS compounds are critical to the safe and effective operation of a range of military items from radars to missile guidance systems, medical devices, and jet engines. The full effects of any ban, whether required by law or a voluntary business decision, are not yet known, but could be both costly to address and likely to leave the Department dependent on supplies from countries like India and China. Building on past successes the Department is working with regulatory agencies and private industry to develop strategies to address these concerns, starting with identifying PFAS products essential to national security and developing mitigation plans.

Housing

Family and Unaccompanied Housing

As the Department's Chief Housing Officer, I recognize that the environment in which our Service members live impacts their quality of life, their ability to do their job, and our ability to recruit and retain the force. I am committed to ensuring that all DoD housing for our members—whether it is government-owned, government-leased, or privatized—meets life, health, and safety requirements and provides a positive living experience for military personnel and their families.

The Military Departments have privatized 99 percent (approximately 205,000 units) of their U.S. family housing inventory, as well as 4,700 unaccompanied housing (UH) apartment units (8,500 bedspaces) on their installations in the U.S. The Department also owns, operates, and maintains

approximately 35,000 family housing units, most of which are on enduring bases in overseas locations, and leases about 5,600 family housing units where government-owned or privatized housing is unavailable. The Department's housing inventory also includes approximately 523,000 government-owned permanent party unaccompanied housing (UH) bed spaces, and more than 2,000 government-leased UH bed spaces.

Going forward, the Department will invest in DoD's government-owned and government-leased housing based on the need to support mission requirements, address health and safety concerns, and modernize unaccompanied personnel housing to provide improved privacy and greater amenities for junior personnel. We will continue to fund the Department's oversight to ensure that privatized housing projects deliver safe, high quality housing, to include continued funding for more than 600 additional government housing personnel hired since Fiscal Year 202. Finally, we will make investments to support the necessary restructure of financially-challenged Military Housing Privatization Initiative (MHPI) projects to ensure that they can meet sustainment needs and deliver quality housing over the long-term.

Military Housing Privatization Initiative (MHPI)

The Department has made significant progress implementing actions to enhance the MHPI program and our oversight of the private sector MHPI companies that own and operate MHPI housing projects. As Congress has recognized, applying many of the Tenant rights at existing MHPI housing projects requires voluntary agreement by the MHPI companies; the Department cannot unilaterally change the terms of the complex, public-private partnerships that established the MHPI housing projects. Nevertheless, as a result of our collaboration with the private-sector MHPI companies, all 18 rights set out in the MHPI Tenant Bill of Rights are fully available at all but three of the nearly 200 installations with privatized housing, representing approximately 97 percent of military families residing in MHPI housing. The remaining three installations provide 15 of the 18 rights, but do not yet provide the MHPI Tenant Rights to seven-year maintenance histories, dispute resolution, or rent segregation the MHPI companies on these installations remain fully compliant with their MHPI project legal agreements with the Military Departments and associated state and local landlord requirements. The Department continues to seek voluntary agreement of the remaining three MHPI companies by working to resolve their remaining concerns and achieve full implementation of the 18 Tenant Rights.

The Tenant Bill of Rights is one of DoD's most visible improvements to enhance the MHPI program, rebuild trust, and reinvigorate DoD oversight, but we have also implemented numerous policies, guidance, and procedures to enhance the Department's oversight of the MHPI program, to include:

- Establishing quarterly programmatic reviews with each of the Military Departments;
- Uniform housing standards and inspection requirements; and
- Improved metrics to gauge performance by the MHPI companies.

Further, the Military Departments have also implemented several measures to strengthen their oversight and hold privatized housing companies accountable, to include:

- Reinforcing installation commander responsibility for day-to-day oversight of housing quality and service provided by the MHPI projects;

- Improving training for commanders and housing staff at all levels of the organization;
- Hiring more than 600 additional government housing-related staff and establishing housing councils and resident advocates;
- Reviewing project business practices to identify and pursue needed corrective actions;
- Working with MHPI companies to revise project performance incentive fee metrics;
- Establishing housing standards and inspection requirements, to include installation inspection and approve of all MHPI housing units before each change of occupancy;
- Improving communication with residents and the annual tenant satisfaction survey;
- Requiring MHPI projects to implement electronic work order systems to increase transparency and reporting of maintenance and repair work orders;
- Establishing policies and procedures for health hazard assessments and mitigation;
- Refining internal departmental oversight practices.

We will continue to prioritize implementation of key MHPI reforms that improve the safety, quality, and maintenance of privatized housing. We will also continue to ensure accountability at all levels within DoD and the MHPI companies as necessary to enforce performance standards, deliver a positive living experience for Service members and their families, and ensure the long-term success of the MHPI projects and program. This includes taking appropriate action to hold MHPI companies accountable for project performance, problems with property management, or inappropriate business practices.

The Department of Defense is committed to working closely with you and the committee staff to ensure the long-term success of the MHPI program and we will remain diligent in our oversight to ensure DoD's privatized housing projects deliver quality housing and a positive living experience for military personnel and their families.

Environmental Justice

The Department recognizes the importance of environmental stewardship as well as the disproportionate burden that pollution places on certain communities. Indeed, fully 39% of DoD installations are in or adjacent to Environmental Justice communities, these being communities that face disproportionate burdens of pollution and environmental degradation. These communities are where our Service members live, relax, and send their children to school. Since 1994, the Department has implemented an Environmental Justice Strategy that address enhancements to community engagement and Tribal consultation, environmental planning, and implementation processes including clean-up and restoration activities. The Military Departments have revised their respective policies and guidance to improve early engagement with disadvantaged communities and consultation with Tribal Nations as a result of Federal actions. In partnership with the Council on Environmental Quality, the Environmental Protection Agency, and other Federal agencies, we continue to develop tools to enhance our mapping and analysis of potential environmental and climate change impacts to communities. The Department is fully prepared to continue to address Environmental Justice by ensuring equality in our investments in military communities, implementing top-down training for Service members and civilian specialists in Environmental Justice literacy, strengthening government-to-government relations with Tribal Nations, and by leveraging existing public-private partnerships to support infrastructure and environmental enhancements in communities adjacent to the Department's

installations. The Department believes that to sustain the defense mission we must work in concert with local communities and build trust through partnerships that safeguard healthy, secure, and vibrant natural and human environments for our neighbors, our Service members, and their families.

OTHER PROGRAMS

The Office of Local Defense Community Cooperation

The Office of Local Defense Community Cooperation (OLDCC), in coordination with the other Federal agencies, delivers a program of technical and financial assistance to enable states, territories, and communities to plan and carry out civilian responses to workforce, business, and community needs arising from Defense actions; cooperate with their military installations and leverage public and private capabilities to deliver public infrastructure and services to enhance the military mission; achieve facility and infrastructure savings, as well as reduced operating costs; increase military, civilian, and industrial readiness and resiliency; and support military families.

OLDCC's program portfolio is presently comprised of approximately 300 separate obligations, exceeding \$1.8 billion and represents partnerships between the Department and most states, territories and communities that host Department of Defense installations.

The OLDCC Installation Resilience Program assists states, territories, and communities to respond to man-made or natural threats as "one community," taking care to remain compliant with the consultation requirement between communities and their local installations as set forth in section 2801 of the Fiscal Year 2020 National Defense Authorization Act. This effort includes tabletop exercises to model out threats to gauge civilian and uniformed first responders alike to enhance the public and private infrastructure and services necessary to sustain our installations and communities. This program necessarily also looks at housing and its resiliency for Service members and their dependents through targeted business-case studies and planning activities.

The Diversification and Modernization Program provides states, territories, and communities the ability to review local industrial base and installation defense dependencies, seeking to deliver results when needed for the Department at the speed of relevancy. This program enables an assessment of community, workforce, and business capabilities, and then an assessment of options to deliver workforce development/training, transportation, and other infrastructure investments to address future needs of installations and the industrial base, education system improvements, and housing availability in tandem with emerging defense priorities.

The Defense Community Infrastructure Pilot Program responds to deficiencies in community infrastructure around military installations. This program aims to enhance military value, cadet training at covered educational institutions, installation resilience, and military family quality of life. OLDCC expects to seamlessly incorporate program changes from the Fiscal Year 2023 National Defense Authorization Act, posting a notice for funding opportunity shortly, and hosting webinars to help communities to better understand and navigate these program changes.

Military Aviation and Installation Assurance Siting Clearinghouse

The Military Aviation and Installation Assurance Siting Clearinghouse continues to protect the Department's ability to train, test, and operate as the nation expands its renewable and other commercial energy and power transmission capacity. Among these energy projects, commercial wind development typically poses the greatest compatibility challenge to DoD due to physical obstruction of low-level flight routes and electromagnetic interference with DoD radar systems. DoD resolves project concerns through collaboration between the Clearinghouse, the Military Departments, local communities, states, and energy developers, thereby maintaining the Department's ability to train, test, and operate while enabling development of alternative energy resources. The Clearinghouse negotiates Mitigation Agreements with wind energy developers to minimize the impacts from proposed projects on DoD missions.

The Department works with the Department of Interior, the Bureau of Ocean Energy Management (BOEM) and states to create plans that support aggressive new offshore energy development goals. The Department works with its Federal, state and industry partners at every stage of planning, permitting, and development. DoD has worked on a solution that allows BOEM to plan towards 3GW of wind generation off the coast of Central California. While this development will constrain some DoD operations, the White House Climate Office, DOI and California agreed to find a balanced solution that allows this Central Coast wind development, while also providing long-term protections against further development in the area. This compromise supports domestic renewable energy goals while providing long-term protections for military operations. DoD has also collaborated in offshore development planning throughout the Atlantic, Pacific, and Gulf of Mexico. In each case, the Department collaborates to protect national security while allowing compatible development.

The Department is actively implementing new approaches to protect DoD missions. The Clearinghouse intensified efforts to advocate for state-level legislation to protect military installations and operations from incompatible wind energy development. Oklahoma, Indiana, Wyoming, and Alabama have passed protections for military missions in wind turbine permitting. Although DoD and developers have had success resolving issues related to incompatible energy development, state support is invaluable in the rare cases where developers choose not to voluntarily coordinate with DoD.

Native American Lands Environmental Mitigation Program

The Native American Lands Environmental Mitigation Program (NALEMP), codified under the FY2021 NDAA, addresses environmental effects of Department actions on Indian lands and on other locations where the Department, an Indian tribe, and the current landowner agree that such mitigation is appropriate. These environmental effects are typically associated with hazardous materials, munitions debris, underground fuel storage tanks, unsafe buildings, lead-based paint and asbestos, and abandoned equipment. Most Indian lands are located in rural and remote areas with low population densities; thus, they might not qualify as high priority sites under the Department's more limited environmental restoration programs. The NALEMP seeks to bridge

the gap between Tribal needs and these traditional risk-based environmental restoration programs and incorporate Tribal priorities to address potential impacts to Indian lands.

To date, over one-hundred sites in the lower 48 states and Alaska have been fully mitigated. Ninety-five percent of the 1,158 potential Tribal impacts reported to the Department have been assessed and 158 have been found eligible for NALEMP and 138 impacts are under review. In FY2022, the Department executed a total of 13 NALEMP CAs, of which 10 CAs were with Alaska Native tribes and three with American Indian tribes in the lower 48. By the end of FY 2023, the Department will execute an additional 14 CAs, of which nine CAs will be with Alaska Native tribes and five American Indian tribes in the lower 48 states.

CONCLUSION

Thank you for the opportunity to discuss DoD's programs supporting energy, installations, and environment. We appreciate Congress' continued support for our enterprise and look forward to working with you.

Brendan Owens

Assistant Secretary of Defense for Energy, Installations, and Environment

Mr. Brendan Owens was sworn in as Assistant Secretary of Defense for Energy, Installations, and Environment (ASD(EI&E)) on January 26, 2023. In this role, he is the principal advisor to the Under Secretary of Defense for Acquisition and Sustainment for all matters relating to energy, installations, and the environment, including operational and facility energy, installation maintenance and environmental planning. He also provides budgetary, policy, and management oversight of the Department of Defense's real property portfolio which encompasses millions of acres and over 500,000 buildings and structures at more than 500 installations.

Prior to his appointment, Mr. Owens served as Principal of Black Vest Strategy, a consultancy focused on the intersection of health, equity, and climate issues in the built environment. He was also a co-founder of Ecountabl, Inc., a technology platform seeking to democratize access to corporate environmental, social, and governance information.

Previously, Mr. Owens had a 19-year career with the U.S. Green Building Council (USGBC). At USGBC, Mr. Owens supported the technical development of USGBC's LEED Green Building Rating System, as well as the creation of numerous other building sector standards and codes for high performance, zero energy and grid interactive buildings. He has experience across supply and demand sectors of the energy industry, buildings, and infrastructure with a focus on integrative technology and inclusive policy to optimize outcomes.

Prior to his work at USGBC, Mr. Owens was the energy manager at U.S. Army's Fort Belvoir, where he participated in source selection, implementation, and measurement and verification of what was the largest energy savings performance contract in Department of Defense history.

Mr. Owens is an engineering graduate from Purdue University, where he served on the Dean's Advisory Council for the University's Honor's College. He is a Virginia-registered Professional Engineer and was honored as a LEED Fellow in 2012. He grew up Coast Guard, but considers Old Town Alexandria, Virginia, where he lives with his family, home.

NOT FOR PUBLICATION
UNTIL RELEASED BY THE
HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON READINESS

STATEMENT OF
HONORABLE MEREDITH A BERGER
ASSISTANT SECRETARY OF THE NAVY
(ENERGY, INSTALLATIONS, AND ENVIRONMENT)

BEFORE THE

HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON READINESS

FEBRUARY 28, 2023

NOT FOR PUBLICATION
UNTIL RELEASED BY THE
HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON READINESS

Introduction

Chairman Waltz, Ranking Member Garamendi, and distinguished members of the Subcommittee, thank you for the opportunity to discuss with you the critical work that happens in the Energy, Installations, and Environment (EI&E) portfolio of the Department of the Navy. It is an honor to have the opportunity to work on policy and programs that are foundational to making sure that our Sailors, Marines, and Civilians are ready – able to do all that our Nation asks them to do. As I lead our efforts across EI&E, I do so in partnership with my Marine Corps and Navy teammates and in service to the dedicated women and men of our Department. In a time where the enemy, the operational environment, and how we deter, train, fight, and win are evolving, the actions we take and investments we make in this portfolio are conspicuous and consequential. I remain focused on modernized and resilient installations, facilities, and infrastructure; unrivaled testing and training ranges; safe and healthy conditions for our people; and careful stewardship, purposeful prioritization, and cognizant decision making around the environment as an enabler at all levels to ensure a ready force.

Current Context

A ready Navy and Marine Corps responds whenever the Nation calls. Around the globe, around the clock, the Navy and Marine Corps are where they need to be, when they need to be there. They are able to do that because of the critical readiness enablers across the EI&E portfolio. Since we last met we have achieved some significant achievements across the partnership that have happened because of partnerships across the federal family and among the communities and state and local partners that share in the places that we live, work, and train.

On behalf of the Fleet and our military special operations forces, I would like to extend my gratitude for all of the work and support from this committee to enable the modernization of the Fallon Range Training Complex (FRTC) in Nevada. Due to incredible efforts over many years across Congress, the Department of Interior, tribal, and state and local stakeholders, we have taken a significant step in the readiness of our warfighters while also prioritizing the stewardship and safety of the sacred environmental and cultural resources in that area, and the health of the local economy. The inclusion of the FRTC expansion in the Fiscal Year 2023 National Defense Authorization Act means that Naval Aviators and Navy SEALs will have training ranges and facilities that provide them a more realistic environment to train like they fight. As we work to modernize the range in the coming years, the DON will support this critical mission and readiness enabler by adhering to our obligations as part of the community.

Late this summer, our Marine Corps proved the value of energy security to mission and community resilience during record temperatures in California. As customers across the commercial grid plugged in, the state's energy managers prepared for managed outages, "brownouts" to prevent a complete blackout. The Marine Corps Air Station at Miramar continued uninterrupted, staying on task and on mission because of stored renewable energy and its micro-grid, the station was resilient. Additionally, it was able to return excess stored energy back to the grid to aid the California commercial grid in providing uninterrupted power to the community and preventing a brownout and a blackout. The Marine Corps micro-grid ensured that the station and the community were resilient, and it has the added bonus of advancing the shared energy and climate goals of California and the Department of the Navy.

Additionally, in May, Marine Corp Logistics Base Albany became the first net-zero energy base in the Department of Defense, producing as much electricity from renewable energy sources

as it consumes from its utility provider measured during a year. By partnering with the local community, the base is independent and resilient, it saves taxpayer dollars, and is able to fulfill its mission of supporting Marines undeterred by any threat, whether natural or manmade.

Other milestones that we have reached indicate more work that we need to do. During my last update, we were months into our response to the November 2021 spill of fuel at the Red Hill Bulk Fuel Storage Facility (Red Hill) in Hawaii. A year later, we have made significant progress as a Department of Defense (DOD), with the Secretary of Defense standing up the Red Hill Joint Task Force (JTF) to oversee the defueling of the Red Hill and charging the DON with the closure of the facility. The DON is grateful for the attention and urgency that this Subcommittee provided as we responded to the contamination at Red Hill and as we continue our work. The DOD delivered its defueling plan July 1, 2022, and the DON delivered its closure plan November 1, 2022. As the JTF focuses on the safe and expeditious defueling of the Red Hill facility, DON is preparing for a similarly safe and expeditious closure of the Red Hill facility. Throughout this process, the DON is working closely with the JTF to ensure complementary actions and continuity of these intimately related efforts and to provide constant, clear communication with the community and other stakeholders. As the DON moves forward to permanently close Red Hill, we will remediate the remaining fuel contamination, conduct long-term monitoring to ensure that the water remains safe, and work with the Environmental Protection Agency and the Hawaii Department of Health. Additionally, we will engage with the local community to solicit input on our closure plan and the opportunities for non-fuel beneficial reuse of the Red Hill facility. With every action, we are prioritizing the health and safety of the people, environment, and communities in Oahu and look forward to continued productive and collaborative relationships with all stakeholders.

As the DON's Chief Sustainability Officer (CSO), I am establishing and overseeing the execution of sustainability goals and metrics across the DON. Sustainability is a mission enabler that facilitates essential operations; enhances readiness; maximizes independence, resilience, and security; minimizes environmental impact; and supports natural and man-made systems. We are applying a sustainability lens to the entire department to ensure that we are maximizing our resources, supporting today's mission needs and anticipating the needs of the future force.

Department of the Navy Priorities

Secretary Del Toro set forth guiding principles for the Department of Navy team to strengthen maritime dominance, build a culture of warfighting excellence, and enhance our strategic partnerships. These objectives support our National Defense Strategy and are the drivers of all that we do. In my capacity as the Assistant Secretary of the Navy for Energy, Installations, and Environment, I support Secretary Del Toro's guidance by focusing on three cross-cutting areas: Critical Infrastructure, Communities, and Climate Action.

Critical Infrastructure

For the Department of the Navy, our critical infrastructure is inextricably linked to readiness. Navy and Marine Corps installations are power projection platforms from which naval forces train, deploy, and maintain forward presence to enable geographic Combatant Commanders to meet operational requirements. These installations comprise not only the buildings, piers, hangars, runways, training and support facilities but also the energy, water, and utility systems that serve as the backbone of our operations.

Installations play a key role supporting forward-deployed forces by providing a place for our Sailors and Marines to train, for our naval units to resupply and reset, and for our warfighters to project power and conduct operations. Naval installations are vital to warfighting readiness and

effectiveness, and the DON is prioritizing resources and to ensure that our installations are prepared to support our Sailors and Marines and ready to respond to what our Nation needs not only today, but also for the future force and fight. For this reason, we are beginning planning on a 30-year infrastructure plan that anticipates and plans towards the needs, requirements, sustainment, and future of these key platforms in our enterprise and the missions we support. We envision a plan that incorporates many of our ongoing infrastructure initiatives across the organic industrial base and key and fleet concentration areas.

The DON is committed to improving and optimizing our organic depots, which includes our four public shipyards, the Fleet Readiness Centers supporting the Naval Aviation Enterprise, and the Marine Corps Depots and Support Facilities. Notably, the Shipyard Infrastructure Optimization Program (SIOP) is modernizing the Navy's four public shipyards to generate Fleet readiness and strengthen our Nation's security. Through this program we will construct and recapitalize dry docks to reconfigure infrastructure using industrial modeling and simulation, detailed engineering studies, and master planning; and to modernize industrial plant equipment. These investments will increase the readiness of our nuclear fleet while also ensuring that this infrastructure is more resilient both to the effects of climate change by accounting for modeled sea-level rise, and adopting new technologies to drive down energy consumption, as well as to geological events by implementing advancements in seismic engineering. Over the past year, the Navy cut the ribbon on a new Production Training Facility at Norfolk Naval Shipyard; began design for a Gerald R. Ford-class aircraft carrier-capable dry dock at Puget Sound Naval Shipyard; completed the super flood basin to support the Dry Dock 1 at Portsmouth Naval Shipyard; and published the final Environmental Impact Statement for the Dry Dock 3 replacement project and Waterfront Support Facilities at Pearl Harbor Naval Shipyard. Through

sustained partnership with Congress, our workforce, and local communities, our goal is to deliver optimized facilities and infrastructure resulting in increased industrial throughput to support operational requirements.

More broadly, at our installations we are prioritizing mission assurance and reducing vulnerabilities by improving the efficiency and resilience of our facilities and systems. These focused actions include hardening our energy, water, and facility control systems, and investing in cutting-edge technologies for energy storage and micro-grids that can enable resilience against and rapid recovery from severe weather or cyber threats. We are placing these enhancements in key strategic locations and creating benefits for the warfighter and community partners. In October 2022, I was pleased to join the Ewa community – Hawaii State and Congressional leaders, Navy leadership, energy providers, Native Hawaiian leaders, and local residents – for a groundbreaking and blessing ceremony for the Kūpono Solar Project at the West Loch Annex at Joint Base Pearl Harbor-Hickam. Under this partnership, the Navy and the State of Hawaii will achieve mutual renewable energy and community resilience goals by providing the site for a new solar and battery energy storage system. The new system will generate 42 megawatts of renewable energy, enough to power 10,000 homes, and will make electric power in Oahu, Hawaii, cleaner, more affordable and more reliable. In addition, the project will provide energy security for Joint Base Pearl Harbor's electrical grid so Navy can maintain operational capability in the event of power outages.

Communities

When the Navy and Marine Corps create an installation, facility, base or station, our Sailors, Marines, and families call it home. We recognize and take seriously that this is a shared home with those outside the fence line, which include residents, businesses, and the environment. As

our people live, train, work, and operate, we form a connection and an opportunity to strengthen the resources and resilience for the entire community.

In January 2023, I joined the Commandant of the Marine Corps for the reactivation ceremony of Marine Corps Base (MCB) Camp Blaz in Guam. Camp Blaz, the first newly constructed Marine Corps base in 70 years, will serve as a strategic hub in the Pacific and will promote regional security. Camp Blaz is a pointed example of how an installation enables warfighting readiness while supporting the local economy, preserving cultural heritage, enabling environmental resilience, and working together with the local community to achieve shared goals. Together with the government of Guam, the DON has modernized water treatment systems, improved roadways and bridges, upgraded power systems, studied the CHamoru culture, and enhanced natural habitats to protect endangered and threatened species.

The DON is leveraging the Department of Defense Readiness and Environmental Protection Integration Program (REPI) to partner with local governments and non-governmental organizations to advance mission readiness through mutually beneficial, sustainable communities near our installations and ranges. The recently-announced 2023 REPI Challenge includes several projects that support DON installations, to include: shoreline stabilization near Marine Corps Base Quantico, Virginia; invasive species management and reef preservation near Pacific Missile Range Facility Barking Sands and Marine Corps Base Hawaii; and habitat improvement and species management at Marine Corps Base Camp Pendleton, Naval Base Coronado, Naval Base Ventura County Point Mugu, Naval Weapons Station Seal Beach in California. In 2022, the DON and the State of Hawaii entered into a cooperative agreement using REPI Challenge funding to implement landscape scale watershed protection, restore native forests to replenish the Pearl Harbor Aquifer, and provide long-term protection of 7,155 acres of forested lands in the

watershed directly above Joint Base Pearl Harbor-Hickam. These native forests protect the source of drinking water for JBPHH and the surrounding local community, provide a buffer from major storm events that cause erosion and flooding, and subsequently minimize impacts to mission operations. This is but one example of a project that proactively mitigates future degradation of our land, facilities, or training activities, and importantly, results in mutual benefit to our local community.

The DON is taking action at our installations and ranges across the world as we protect the environment as a strategic asset that supports our National Defense. In January 2023, after decades of collaborative conservation efforts at the Navy's San Clemente Island, the U.S. Fish and Wildlife Service announced last month that five species – San Clemente Island paintbrush, lotus, larkspur and bush-mallow plants and San Clemente Bell's sparrow –have fully recovered and no longer require Endangered Species Act protection. What was once a largely barren landscape now supports numerous endemic species of plants and animals, including the five species being removed from the federal lists of threatened and endangered species, and with the benefit of this progress, we now have enhanced access to key training range and resources. Our conservation efforts on San Clemente Island demonstrate how the DON's responsible management of natural resources not only can preserve, protect and conserve the natural environment while simultaneously reducing costs to the DON and enhancing our national security mission.

Just as we are committed to the health and safety the community that hosts our installations, we are also committed to the health and safety of our Sailors, Marines, Civilians, and their families. As the DON Designated Agency Safety and Health Official (DASHO), I am focused on reducing and eliminating occupational and off-duty accidents, injuries and illnesses while

cultivating a learning culture to sustain readiness. The DON does this through a comprehensive safety and occupational health program that addresses a wide range of functions and missions in various complex environments. The DON continues to leverage venues such as the Learning to Action Board and organizations such as the Naval Safety Command to implement a Safety Management System that fosters learning, anticipates needs and enhances the safety culture, and highlights programmatic shortfalls and manages risk at the proper level.

The DON is continuing to focus on privatized housing by providing rigorous oversight of the companies that provide privatized housing for our military families and ensuring that our leaders are advocates for Sailors, Marines and their families. In December 2022, the Marine Corps completed its annual Tenant Satisfaction Survey, which is conducted by a third party, to solicit feedback from residents of privatized or government-owned homes on our installations. Additionally, this past fall, the Navy completed third-party inspections of all of its privatized family housing units; we are on track to receive the full inspection reports in Spring of 2023. Finally, we continue to appreciate Congress's support of increased government personnel in housing offices at the installation, regional and headquarters. The DON remains dedicated to providing oversight, quality control, and support, and we are striving for continued improvement in the operation, maintenance, and customer service in privatized family housing.

Outside of our fence lines, the communities that host our Navy and Marines Corps installations continue to utilize the Defense Community Infrastructure Pilot (DCIP) program to fund community infrastructure projects that benefit local installations, enable the DON's warfighting mission, and provide support to our service members, and their families. Using 2022 DCIP grant funds, Onslow County in North Carolina will upgrade a runway at a local airport to benefit travel in southeastern North Carolina, including Marine Corps Base Camp

Lejeune, Marine Corps Air Station New River, and Marine Corps Air Station Cherry Point. In Florida, a new water main will improve capacity and pressure for not only for Naval Station Mayport, but also the surrounding community where many of our Sailors, Marines, Civilians and their families live. Finally, the city of Newport News in Virginia will undertake a \$15 million project at the Harwood's Mill Reservoir Dam to increase flood protection for the entire community and ensure a reliable water supply to Naval Weapons Station Yorktown.

In addition to supporting our communities to compete for DCIP grants, Navy and Marine Corps installations continue to look for ways to smartly leverage the authorities granted by Congress, like Intergovernmental Support Agreements, Utility Privatization, Energy Savings Performance Contracts, Utility Energy Service Contracts, and Enhanced Use Leases. These authorities are invaluable because they enable us to effectively leverage expertise in the private sector, strengthen our ties with the local community, pursue best value with taxpayer dollars, and generate cost savings for our installations. We have seen many successes over the past year. Last April, Submarine Base Groton announced several new partnerships with the State of Connecticut Department of Transportation, the Capitol Region Council of Governments, and Groton Utilities, which will allow the installation to obtain lead abatement services, fencing repair, and improved storm water infrastructure while generating cost savings for the Navy. And in November, the DON awarded a \$22 million utility energy service contract for Marine Corps Base Camp Lejeune to deploy an innovative micro-grid solution that enhances energy security and includes upgraded electrical infrastructure, 5 megawatts (MW) of on-site natural gas-fired generation, a 5.4-MW battery energy storage system, integration of an existing solar photovoltaic system, and a micro-grid controller to provide integrated demand management, black start and islanding capability. Most recently in January 2023, the Department of the Navy, along with the

Department of the Army and Department of the Air Force, came together under a state-wide IGSA for the Texas Department of Transportation to provide operation and maintenance support military bases across the state, generating an overall estimated cost savings of 25 percent for the DoD. Finally, in San Diego, Navy Region Southwest and the Port of San Diego signed an IGSA memorializing a first-of-its-kind partnership that will provide millions of dollars for further electrification efforts for both Naval Base San Diego and the Port of San Diego, and improve air quality and public health on and around the San Diego Bay Working Waterfront. As other states join California in adopting Low-Carbon Fuel Standards and other policies to transition to cleaner energy sources and reduce greenhouse gas, the Navy and Marine Corps will look for more opportunities to collaborate and work together to enhance our energy resilience as one community.

Climate Action

For the Navy and Marine Corps, a changing climate means a contested operational environment. Climate change makes the world a more volatile place: it brings extreme weather events, more humanitarian crises, and heightened friction around essential natural resources. A more volatile world calls on the United States Navy and Marine Corps. These calls increase demands on our forces while simultaneously impacting the capacity to respond to those demands. This threat impacts not only where they are needed, but how and what drives the demand for operations. It is impacting the way our Sailors and Marines train, equip, and deter aggression. If they are called to do so, it will change how they fight and win.

Scientists have indicated that this is a decisive decade for climate action – indeed, it is a decisive decade for our military as well as it faces what the recently released National Security Strategy and unclassified National Defense Strategy identify as the pacing challenge of China

and the dangerous transboundary threat of climate change. Indeed, China has been engaged to support island nations who face this existential threat most imminently and prepare with awareness of the importance of logistics in any confrontation.

The DON is operating under *Climate Action 2030* to create a force that can operate and succeed in any environment. We are focused on building resilience and reducing the national security threat of climate change. We view this as a tactical, operational, and strategic enabler. We create a warfighting advantage by increasing the resilience of our bases, making our structures, power grids, fuel distribution systems, and water lines more survivable. For the Navy and Marine Corps, climate readiness is mission readiness. We maintain our maritime dominance and the superiority of our naval forces by constantly seeking innovative solutions, leveraging science, partnering with industry and other government entities, and investing responsibly to achieve mission readiness, jointly with our partners in Congress.

Navy and Marine Corps installations are constantly challenged by natural hazards like extreme rainfall, drought, and coastal erosion. Because many Naval installations are coastal by the nature of our service, sea level rise and extreme weather events have a direct and forceful impact on the Navy's and Marine Corps' infrastructure and installation operations. We are focused on applying updated standards in the Unified Facilities Criteria to our infrastructure, conducting training exercises and planning processes that harden and support quick recovery for our installations and facilities extreme weather events and energy disruptions. We are also expanding partnerships and installing advanced technology – like energy load monitoring, distributed power generation, smart grids, and micro-grids – to increase energy efficiency and provide energy security for our critical-mission infrastructure, along with practices that reduce consumption. By investing in state-of-the-art systems and modern infrastructure, we are

positioning our installations to prevent, recover and survive a prolonged loss of electrical service from natural or manmade events.

Our Navy and Marine Corps operational forces also need resilient and reliable energy in order to perform their mission. Navy and Marine Corps operational energy challenges have only increased in the past decade as platforms and weapons systems require increasing capability and increased range to sustain and strengthen the United States' deterrence with the People's Republic of China as our pacing challenge. Fuel demand is projected to increase by as much as 14 percent between now and 2030 as a result of increased demand of weapons systems, force structure, and distributed maritime operations. As a result, the DON is focused on enhancing the lethality and effectiveness of our operational forces by extending the operational reach of current and future weapons systems through more-effective use of energy; reducing energy consumption and external energy logistics requirements to forward deployed strike groups and expeditionary units; increasing energy resilience of forward bases, supply depots, and cooperative security locations; increasing the effective use, conversion, storage, distribution, and control of energy of our of future weapons and sensors onto platforms; and fostering an energy culture in our Sailors and Marines through policy, training, and education.

Together with new technology, we recognize that nature-based solutions enhance our resilience and mission readiness for training and operations. This past year, the DON partnered with the U.S. Army Corps of Engineers' Engineering with Nature program on a series of workshops covering eleven installations to provide a science-based assessment of opportunities. Teams of scientists, engineers, landscape architects and planners visited installations that are experiencing diverse environmental stressors, like severe weather and shoreline erosion at Naval Air Station Key West, Florida, and drought and desertification at Marine Corps Air Station

Yuma, Arizona, to develop landscape-scale projects to address resilience challenges that threaten our infrastructure and our mission assurance.

Under the Fiscal Year 2022 National Defense Authorization Act, the DON is conducting a pilot program to evaluate the use of sustainable building materials in military construction. And this year, we partnered with our sister services to develop consistent program criteria and evaluate state-of-the-art sustainable building material technologies and approaches for their implementation. As part of this pilot program, the Navy has identified new projects that will be built with sustainable materials. We remain committed to our responsibility to achieve best value for the taxpayer, and are exploring building materials that maximize resilience, are cost-effective, and sustainable.

The DON is also partnering with communities and state entities to reduce our climate impact and make our installations more climate-resilient. In January 2023, the California Energy Commission approved nearly \$2 million in funding for Navy Electric Vehicle Pilot Program and the Electrification Blueprint Studies for three Navy and three Marine Corps installations in California. These projects mark the most recent accomplishment that has stemmed from the Navy and California Energy Commission 2021 Memorandum of Understanding to foster collaboration on energy and water related issues to generate cost savings, resilience, and mission and community success.

The Navy and Marine Corps team continues to use science-based tools and strategies to ensure our master plans remain relevant and useful living documents for long-term installation planning. Earlier this year, the DON provided a briefing to this committee on our progress at two installations that are at risk from extreme weather events: Marine Corps Recruit Depot Parris Island, South Carolina and Naval Base San Diego, California. The Navy and Marine Corps are

adding a resilience component to the master plans of our major installations, leveraging the lessons learned from Parris Island and San Diego. In addition, the DON has recently completed resilience studies on smaller installations such as the United States Naval Academy. We continue to prioritize and fund projects to that will enhance resilience, protect our investments and mission assurance at these locations.

Conclusion

A changing operational environment with fresh and unprecedented challenges demands a ready Navy and Marine Corps. I view my role as essential to generating and sustaining that readiness. Thank you for this committee's support of the Navy and Marine Corps and for your focused attention on the Energy, Installations, and Environment portfolio.

Meredith Berger
Assistant Secretary of the Navy
(Energy, Installations and Environment/Chief Sustainability Officer)

The Honorable Meredith Berger assumed the responsibilities of the Assistant Secretary of the Navy for Energy, Installations & Environment on July 28, 2021. She is responsible for providing oversight and policy for Navy and Marine Corps energy and climate resilience; infrastructure sustainment, restoration and modernization; military construction; acquisition, utilization and disposal of real property and facilities; environmental protection, planning, restoration and natural resources conservation; and safety and occupational health.

Ms. Berger has served in a variety of policy and senior leadership positions in both federal and state government and the private sector. Before her nomination, Ms. Berger was a senior manager for the Defending Democracy Project at Microsoft Corporation. She was a Fellow with the Harvard Kennedy School's Belfer Center for Science and International Affairs.

Ms. Berger was Deputy Chief of Staff to Secretary of the Navy Ray Mabus, advising the Secretary on the formulation and execution of Department-wide strategy, policies, plans, and standards.

Ms. Berger also served as a Department of Defense Fellow. Prior to her tenure with the Department of the Navy, Ms. Berger held policy positions with the Environmental Protection Agency and the Office of the State of Florida Chief Financial Officer.

Ms. Berger holds a master's degree in Public Administration from the Harvard Kennedy School, a Juris Doctor from Nova Southeastern University, and a Bachelor of Arts in American Studies and Spanish from Vanderbilt University. She has earned the Secretary of the Navy Distinguished Civilian Service Medal, Secretary of Defense Medal for Exceptional Public Service, and the EPA Gold Medal for Exceptional Service.

78

RECORD VERSION

STATEMENT BY

THE HONORABLE RACHEL JACOBSON
ASSISTANT SECRETARY OF THE ARMY
(INSTALLATIONS, ENERGY AND ENVIRONMENT)

BEFORE THE

SUBCOMMITTEE ON READINESS
COMMITTEE ON ARMED SERVICES
UNITED STATES HOUSE OF REPRESENTATIVES

FIRST SESSION, 118TH CONGRESS

ENERGY, INSTALLATIONS, AND ENVIRONMENT PROGRAM UPDATE

FEBRUARY 28, 2023

NOT FOR PUBLICATION UNTIL RELEASED BY THE
COMMITTEE ON ARMED SERVICES

Introduction

Chairman Waltz, Ranking Member Garamendi, and distinguished members of the committee, thank you for this opportunity to discuss the current state of the Army's Installations, Energy and Environment portfolio. I want to thank the committee for their continued support and commitment to the Army's soldiers, families, civilians, and soldiers for life. The committee's leadership has been invaluable in our shared pledge to successfully defend our Nation and its interests as we work to improve our installations and support the Army now and in the future.

As old threats evolve and new ones emerge, the Army is making decisions and prioritizing investments that not only contribute to current readiness but will also pay dividends on the battlefields of 2030 and beyond. The Army's bedrock priorities of people, readiness and modernization guide all our strategies and investments. For the Army, people are at the core of everything we do. Installations supply the foundational support for our people, especially soldiers and their families, caregivers, and survivors. Installations are where we train, work, learn and live. Therefore, as we build the Army of the future, we must make strategic investments in our installations, making the best use of innovative technologies, and streamlining processes to accelerate improvements. The future of installations is now.

Putting "People First"

Providing high quality housing, barracks, and Child Development Centers (CDCs) for soldiers and families is essential to readiness. Modern barracks and access to high quality childcare providers and facilities helps us attract recruits and retain soldiers and their families. We are demonstrating our commitment to achieve these quality of life goals in a number of ways. For example, we are investing \$11 billion between fiscal years (FY) 2024 and 2032 to improve barracks across the Army. We are committed to ensuring sufficient and quality childcare by advancing new construction in multiple locations. And we are holding housing providers accountable for delivering high

quality housing to soldiers and families. While we can't deliver the full extent of improvements overnight, we can provide consistent and enduring resources to continuously improve the quality of life for soldiers and their loved ones.

Army Infrastructure Investments

The Army remains committed to improving our infrastructure and addressing deferred maintenance needs.

We are grateful to Congress for funding Facilities Sustainment, Restoration, and Modernization (FSRM) and Military Construction (MILCON) funding in the FY 2023 National Defense Authorization Act (NDAA) and Omnibus Appropriations legislation. The FSRM funding will enable the Army to increase sustainment to 92.5% of its requirement for FY 2023, thereby slowing the pace of facility degradation.

The FY 2023 Omnibus Appropriations legislation also added critical MILCON construction funding for barracks and other priorities. This funding will advance new projects and address project cost overruns due to increases in the costs of building materials. Though inflation rates are leveling off, construction industry costs continue to out-pace core inflation by 2% to 3%. If Army MILCON construction projects end up being higher than the amount authorized and appropriated, the Army will continue to make adjustments accordingly, by reprogramming savings from other projects if available.

The Army is also incorporating sustainable building practices to enhance facility resilience. We are developing pilot projects to explore the use of sustainable materials, including mass timber, to improve building efficiency and reduce lifecycle maintenance costs. Also, in accordance with Administration and DoD directives, we are beginning the planning for construction of fully electrified buildings. These buildings are expected to result in lower energy costs through the use of efficient technologies. The realized

savings from these improvements can then be directed to people and readiness programs.

Army Housing

The Army continues to focus on the oversight of our privatized housing providers to make sure quality services are delivered. We appreciate Congressional guidance and authorities to accomplish these important goals. We are addressing the remaining elements of the FY 2020 NDAA's Military Housing Privatization Reform and, with respect to Army owned housing, we are implementing the FY 2021 NDAA's extension of these reforms to government-owned housing. We are continuing to develop policies and guidance to address the FY 2023 NDAA's housing-related requirements, including those related to the Basic Allowance for Housing, Housing Research Market Analysis standardization, ground lease extension briefs and notices, the demolition of three Fort McNair homes, mold inspections, and implementation of medical audits.

With the help of Congress, we are making great strides in improving the Army-owned housing inventory located primarily overseas, and we are on target for 89% of these homes to be characterized as "good" or "adequate" by 2029. MILCON housing projects are awarded and in progress in Baumholder and Vilseck, Germany; Vicenza, Italy; Camps Humphreys and Walker, Korea; Kwajalein Atoll; and Fort Buchanan, Puerto Rico. All of these projects will significantly improve the quality of life for our soldiers and families in these locations.

Privatized Housing Update

Ground leases are the foundational legal documents governing the obligations of private housing providers who own and manage family housing on leased lands. The Army recently developed revised ground lease language that specifically outlines the consequences of non-compliance by project companies. The new language reinforces the premise that project companies are charged at all times with having full knowledge, along with the obligation, to comply with all of the requirements of the ground lease and

to correct any non-compliance expeditiously. Additional changes to the ground lease language include the application of Davis-Bacon Act wages, as required by Department of Labor regulations, the Code of Federal Regulations, applicable Executive Orders, and Federal Acquisition Regulations.

The Army is exploring the use of ground lease extensions (GLEs) and project refinancing as tools to facilitate the private housing providers' recapitalization of housing inventory and infrastructure where the Army deems it necessary and appropriate to do so. These opportunities to secure additional financing through third party investment help establish a more secure operational footprint for privatized housing projects to remain financially viable. The Army will use new reporting requirements detailed in the FY 2023 NDAA to brief Congress before proceeding with GLEs. For two installations where the housing provider does not have adequate reserves or opportunities for third party financing, the Army is seeking MILCON appropriations to meet immediate housing improvement needs.

When it comes to privatized housing oversight, the Army conducts quality assurance inspections for all changes of occupancy and to confirm that all life, health, and safety maintenance work orders have been completed satisfactorily. Also, the Army is fulfilling the FY 2020 NDAA mandate to conduct comprehensive inspections of 100% of privatized housing. While the Army has been conducting "between occupancy maintenance" inspections, and inspections related to life, health, and safety work orders since December 2020, the Army is working to expand comprehensive home inspections and ensure they are completed by third-parties in order to meet the FY 2020 requirement. Third-party comprehensive housing inspections were completed at Fort Meade in August 2022 as the Army's second installation in the 100% inspection pilot program. As with Army's first pilot inspection at Fort Belvoir, Fort Meade's overall housing inventory was rated in good to excellent condition. The 100% inspection program will continue in FY 2023 with Fort Gordon. Additionally, in FY 2023, the Army is continuing to conduct financial audits of privatized housing programs with independent

third-party experts. To date, the Army has completed 21 reviews of 34 projects, with six additional reviews ongoing.

The Tenant Bill of Rights implementation, set forth in the FY 2020 NDAA, is improving service delivery and restoring trust between privatized housing companies and residents by clarifying rights and responsibilities and giving residents a more powerful voice in the process. We have worked hard to ensure that residents know where to turn for assistance and how best to engage Installation leadership and Army housing offices to advocate on their behalf. Of the 37 disputes that were initiated since the Army created the Tenant Bill of Rights dispute resolution process, 33 were resolved informally and only four required formal adjudication under the process.

As part of the Army's commitment to oversight and accountability, the Commanding General of the Army, Installation Management Command, holds weekly meetings with privatized housing companies and stakeholders throughout the installations community to review the physical and financial conditions of privatized housing and to receive an update on the status of any displaced families. The Army has established an enforceable incentive fee metric to reward improved work order response times and achieve better quality work, thereby increasing resident satisfaction. The metric is reviewed and updated annually to ensure it is achieving desired outcomes.

Barracks / Unaccompanied Housing

The Army is committed to investing over \$1 billion per year in FSRM and MILCON across the Future Years Defense Program (FYDP) and all components—the Active Army, Army National Guard and Army Reserve for Unaccompanied Housing needs. The Army continues to identify solutions to ensure every soldier is afforded the opportunity to live in a high quality, fully-functional environment. These solutions include managing room assignments to inventory; increasing investments across the FYDP; addressing deficits through new MILCON; prioritizing Restoration and Modernization

projects at installations with the greatest need; maximizing sustainment funding to address accelerated facility deterioration; and evaluating privatization opportunities at select installations. To continue to improve barracks conditions, the Army conducted a survey of 40,000 soldiers residing in Permanent Party Barracks across five installations. The results of this survey will inform future decisions on improving soldiers' living conditions.

Innovation and modernization are at the forefront of the Army barracks construction program. The Army is using a new construction standard for barracks which enhances quality of life standards for soldiers. For E1-E4, the barracks standard includes a four-bedroom, two-bathroom module with a living room, full kitchen, and easy access to laundry facilities. For E5-E6, the barracks standard includes a two-bedroom, one bathroom module with a living room, full kitchen, and easy access to laundry facilities. Several barracks pilot projects are currently scheduled for construction and renovation to reflect these new building efficiencies.

Army Lodging

The Army's privatized lodging inventory consists of 12,275 rooms across 40 installations. Over the past 13 years, nearly \$1.2 billion in private sector capital has been invested to recapitalize these facilities, with one out of three rooms having been newly built. In November 2022, a new 69-room hotel opened its doors at Aberdeen Proving Ground, Maryland. New hotels for Fort Bragg, North Carolina and JBSA-Fort Sam Houston, Texas are currently in design. The Army is assessing ways to accelerate the construction of additional hotels.

Guest satisfaction scores at privatized hotels increased for the ninth straight year. The program continues to meet the Army's mission by providing safe, affordable, and high-quality on-post lodging for Army soldiers and their families.

The Army's overseas direct-run lodging inventory consists of 1,857 rooms across 11 installations. Six Army Lodging projects for overseas bases, totaling over \$311 million and funded with nonappropriated funds, are in design or construction. Specifically, new facilities are planned for Camp Walker, Baumholder, Camp Humphreys, Hohenfels and Camp Zama, with an additional 71 rooms slated for renovation at Camp Humphreys.

Delivering on Child Care

Another important part of taking care of people is providing access to affordable quality childcare, particularly in communities where availability of off-post care is limited. The Army has a robust Fee Assistance Program that subsidizes the cost of community childcare for approximately 10,000 children per day when a family has limited access to installation childcare or a family's duty station is off an installation. The Army also incentivizes Family Child Care (i.e., home-based) providers. The Army is looking to add and expand CDCs over the next ten years.

The Army appreciates the committee's support of CDCs through funding for planning and design. The Army currently has 44 CDC projects under design (valued at \$494 million).

Army Historic Housing

The Army continues to work with the Advisory Council on Historic Preservation (ACHP) to manage our inventory of historic homes in accordance with the National Historic Preservation Act of 1966 (NHPA). The Army successfully worked with the ACHP to complete the 2020 "[Army Program Comment for Inter-War Era Historic Housing, Associated Buildings and Structures, and Landscape Features \(1919-1940\)](#)." This landmark agreement allows Army to undertake a series of improvements to historic housing to manage an inventory of more than 3,200 Inter-War Era housing units in cost effective ways such as through the use of imitative substitute building materials.

The Army has been working with the ACHP to develop a similar Program Comment for Vietnam War Era Housing (1963-1975). If successful, the Army will have a programmatic solution for 95% of its historic homes. Programmatic solutions continue to save the Army millions of dollars by streamlining the NHPA compliance process, delivering consistent preservation outcomes, and providing the flexibility to improve the quality of life, health, and safety of Army families – all while addressing the emerging need to implement climate adaptation measures. The Army program comments provide flexible management capabilities that ensure the long-term preservation of historic Army housing while maintaining these structures as functional real property assets.

Safety and Occupational Health

Ensuring our soldiers and civilians are ready to support the Army mission requires extensive and continual investment in proactive injury and illness prevention. The Army is implementing the Army Safety and Occupational Health Management System to move from a reactive to a proactive approach to safety.

This management system will include comprehensive oversight of each command and local installation safety and occupational health programs and processes. We are also relooking at the entire Army safety enterprise to best position the enterprise to support the Army of 2030. To ensure facilities are safe and healthy for use by our workforce and military families, Army commanders are evaluating facilities with a specific focus on health and safety of housing and CDCs. The Army is inspecting all Army CDCs to identify any unresolved safety issues, including lead, asbestos, and mold, that adversely impact health in the facilities. The Army is improving training to our safety and health professional workforce to ensure they retain and enhance technical competencies to better inform commanders of health and safety risks and to provide recommendations for mitigating those risks.

Building A Resilient Force

To support its “People First” strategy, the Army is focused on promoting resilience across the Army enterprise, beginning with our installations. This will ensure that Army facilities and the people working in them can continue to adapt to new threats in a contested, multi-domain environment. Building resilience across the force will require us to collaborate with defense communities to identify challenges outside the fence line and to work with third parties to build mature and enduring partnerships that help the Army respond to current and emerging challenges. We must sustain our ability to fight and win the nation’s wars.

Army Climate Strategy Implementation

The Army’s mission to fight and win our nation’s wars remains unchanged. Climate change makes this mission more challenging. The Army must proactively address climate risks to maintain its strategic edge in a climate-altered world. The Army Climate Strategy will increase the resilience of our installations as well as the capabilities of our fighting force, while at the same time reducing the vulnerability of our soldiers, our physical assets, and operational supply lines. Nothing we are doing to address these risks comes at the expense of readiness. To the contrary, climate resilience is a key part of readiness.

The goals of the Army’s Climate Strategy will put us on a path toward building a more modern, resilient and capable force of the future. For example, we are working to install microgrids on every installation by 2035, with a goal of combining these systems with enough carbon-free energy generation and battery storage to self-sustain critical missions at all Army installations by 2040. Microgrids include on-site power generation and controllable distribution systems, and, depending on the power source, energy storage. Currently, the Army has 28 operational microgrids, with nine under construction and 18 in design.

To help inform how our installations and facilities will specifically mitigate or adapt to the effects of climate change, the Army is moving forward on Installation Climate Resilience Plans (ICRP) as required by 10 USC 2864. ICRPs will incorporate data from the Defense Climate Assessment Tool (originally developed by Army) among other relevant data sources to identify a specific installation's vulnerability to climate change impacts based on the geographic region where that installation is based. The ICRPs are valuable tools to inform installation leaders and planners about location-specific short and long-range climate impacts. Having this information helps to understand risk and identify mitigation actions that will protect the Army's ability to train and deploy under climate-altered conditions. The Army has completed ICRPs for Fort Carson, Colorado, and Anniston Army Depot, Alabama, and has ICRPs underway for Forts Greely and Wainwright, Alaska, Fort Bragg, North Carolina, and Fort Bliss, Texas. ICRPs will be initiated in FY 2023 for Fort Hood, Texas, and Fort Stewart, Georgia.

When it comes to the operational force, we are examining how a reduction in energy usage can enhance warfighting capability. Working closely with industry partners, the Army is engineering and testing anti-idle retrofit kits for all tactical wheeled vehicles, with procurement beginning in FY 2025. Intelligent anti-idle controls reduce engine run-times by up to 50%, reduce fuel consumption by at least 20%, improve silent watch capability, and reduce maintenance costs. The Army is also developing and testing technologies for hybrid-electric tactical vehicles, with a goal to field hybrid drive tactical vehicles by 2035 and fully electric tactical vehicles by 2050. These efforts will enhance operational capability and mitigate risks to soldiers through reduced acoustic and thermal signature, silent mobility, increased sprint speed, extended range, increased reliability, and lower fuel consumption, which significantly lessens supply line vulnerabilities. Early technology demonstrators of hybrid-electric vehicles are in the testing stages.

Battlefield charging remains a challenge and we will not advance any technologies that put the mission or our soldiers' safety at risk by having insufficient power to operate equipment or vehicles. To address this challenge, a coordinated,

Army-wide effort, led by Army Futures Command, in collaboration with industry, is developing technologies for efficient and effective battlefield charging capabilities. In the meantime, the Army is exploring opportunities to use the single charge of electric tactical vehicles for discrete missions so that we can better understand the observed operational benefits.

In the realm of more energy efficient aircraft, the Army's UH-60 Blackhawk, AH-64 Apache, and the Future Attack Reconnaissance Aircraft will be retrofitted with the T901 Improved Turbine Engine (ITE). The ITE is expected to reduce fuel consumption by 13% to 25%, decrease maintenance by 30%, and provide 50% increased shaft horsepower. This will enable full-payload aircraft to fly higher, in hotter temperatures, and for extended ranges. In March 2022, the first engine began testing.

The Army is partnering with the rest of the Joint Force to develop and standardize advanced high-performance, high-capacity batteries to power vehicle, aircraft, weapons, and soldier systems. Army-led efforts to create a family of advanced standard batteries will simplify the supply-chain and address obsolescence issues for legacy systems. The Army is also collaborating across DoD as part of a government-wide effort to strengthen supply chains and mitigate critical materials vulnerability. This includes maximizing the authorities and funding under Title III of the Defense Production Act where possible. We are also exploring opportunities to develop substitutions for these critical elements, including by partnering with industry as battery technologies advance at a rapid pace.

Installation Energy and Water Resilience

Army installations and the critical missions they support—power projection, force mobilization, and command and control—predominantly rely on commercial utilities for energy and water. Energy and water supporting our installations must be available, and the sources and methods of delivery must be able to withstand attack and recover from interruption to ensure seamless mission execution. Resilience requires coordinated

action to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from unexpected disruptions such as grid or equipment failures, cyberattacks, or extreme weather events and natural disasters.

Ensuring that installation infrastructure and services are able to withstand and repel cyber-attacks is a critical component for success of the Army's multi domain operations. The Army established the Control Systems Governance Office to improve management of the control systems enabling defense critical infrastructure, installation public works, power grids, energy systems, weapons, manufacturing, and medical systems.

The Army's Installation Energy and Water Resilience Policy empowers installation senior commanders to set energy and water requirements to support the critical missions on their bases. Through development of Installation Energy and Water Plans (IEWPs), the Army assesses risks and opportunities, generates risk mitigation options, and implements prioritized resilience and efficiency solutions at all installations. Of the 189 IEWPs that are expected to be completed, the Army has completed 148, and is on track to complete the remaining plans in FY 2023.

The Army continually advances new technologies to improve installation management by engaging with federal and private-sector research and development communities. For example, 32 active technology demonstrations are underway at Army installations through the DoD's Environmental Security Technology Certification Program, and Army installations are also participating in pilot energy resilience projects with the Department of Energy. Congressional funding for Army research labs has also benefited installations' ability to test and leverage resilient technologies. For example, in FY 2021, Congress funded the U.S. Army Corps of Engineers' Engineering Research and Development Center to facilitate the demonstration of a "flow battery" at Fort Carson, Colorado, in partnership with industry and the local Colorado Springs Utility. Potential benefits of flow batteries include low projected lifecycle costs, long duration discharge with daily discharge capability, multiple times longer life-span compared to

lithium-ion storage, easier material sourcing, and improved safety. The battery will be commissioned later this year and tested through 2026.

Water plays an essential role in Army missions such as industrial base manufacturing, equipment maintenance and operations, facility heating and cooling, firefighting, and training land management. In FY 2022, Army installations used over 37 billion gallons of water. This number is down from previous years, reflecting a deliberate water conservation effort. The Army continues to protect water from ever-increasing man-made and natural threats, such as drought. Many Army installations lead the way in water sustainability and resilience. For example, in FY 2022, the Army preserved drinking water by capturing, treating, and re-utilizing nearly 690 million gallons from alternative sources such as rainwater harvesting systems at Fort Buchanan, Puerto Rico, and re-treated wash water at Fort Leonard Wood, Missouri. However, as environmental stresses worsen, the Army must continuously consider and improve how installations access, use, and re-use water, in partnership with utilities, communities, regional partners, industry, academia, and research institutions.

Resilience capabilities must be validated at Army installations through semi-annual routine and annual full-scale testing of all backup systems that support critical missions. The Army conducts Black Start Exercises to test installations' ability to respond to an electric grid outage. These exercises have been completed at six bases and planning is underway to execute these exercises at five additional locations in FY 2023: Fort Carson, Colorado; Fort Drum, New York; Fort Campbell, Kentucky; Fort Riley, Kansas; and U.S. Army Garrison Bavaria, Europe. These exercises are the best way to test the inter-relationships of systems across an installation and determine how well they may function in the event of an outage. These exercises are invaluable for identifying previously undetected problems such as generator circuit connection gaps, or malfunctioning equipment.

The Army is also promoting energy efficiency through the *Resilient Energy Funding for Readiness and Modernization, or REFoRM*, program, authorized by

Congress in Title 10 U.S.C. § 2912, *Availability and Use of Energy Cost Savings* REFORM allows the Army to direct energy cost savings back to the installations to reinvest in energy programs and for a variety of quality of life programs. Army has realized over \$100 million in energy cost savings since REFORM's inception.

Alternative Financing

As the Army looks at ways to mitigate vulnerabilities, we must consider the full suite of resourcing and acquisition authorities. This includes utilizing all available appropriated fund programs, such as Operation and Maintenance, MILCON, and the specific subset of MILCON, the Energy Resilience Conservation and Investment Program. In addition to appropriated funds, third-party financing resources are also a critical component for addressing vulnerabilities. The threats which necessitate resilience planning do not start or stop at the fence line and we must partner with communities, utilities, energy service companies and state and local governments to address these threats. Third party financing through the use of real estate out grants, energy savings performance contracts (ESPCs), utility energy savings contracts (UESCs), utilities infrastructure privatization and power purchase agreements are invaluable to help the Army address utility vulnerabilities. The Army is also very supportive of local community applications for Defense Community Infrastructure Pilot Program grant opportunities.

In FY 2022, the Army updated its ESPC and UESC policy to maximize use of these contracts as a part of an overall strategic approach to sustain, restore, and modernize facilities, to address the facilities maintenance backlog, and to achieve efficiency and resilience objectives. In FY 2022, the Army awarded four ESPCs and five UESC projects totaling \$230 million, delivering the Army 2.234 megawatts of onsite carbon-free energy generation. The Army is working to award over a dozen ESPCs and UESCs in FY 2023, with more to follow.

The Army's Office of Energy Initiatives (OEI) is currently working with nearly 30 installations to rapidly develop large-scale, privately financed energy generation and storage projects, many of which include microgrid configurations. OEI collaborates with industry and other private investors to identify mutual needs and leverages those opportunities to meet the Army's requirements. To date, 11 installations host OEI-developed projects, providing a combined 325 megawatts of energy production capacity, secured through \$627 million of private sector investment, with anticipated life-cycle operations and maintenance values of \$603 million. In addition, the Army has entered into real estate agreements for two projects that will begin construction in FY 2023, and we are in the final stages of negotiation for three more projects.

The Defense Community Infrastructure Pilot Program has been an invaluable tool facilitating more meaningful planning between installations and defense communities. Resilience projects such as the FY 2022 \$14.9 million grant awarded to the City of Boiling Springs Lake, North Carolina to restore four dams damaged by 2018 Hurricane Florence will mitigate flood risks to the community and to the Military Ocean Terminal Sunny Point. Similarly, a \$12.8 million grant to the Alaska Energy Authority to extend electric transmission lines will help offset the cost of expanding electricity access to Alaskans, while also making Fort Wainwright's Black Rapids Training Site less reliant on standalone diesel generators.

Intergovernmental Service Agreements to Enhance Readiness

The Army is aggressively using Intergovernmental Service Agreements (IGSAs) to obtain better municipal services at a more affordable price. The Army's 122 IGSAs include agreements for environmental services, firefighting services, waste management and dozens of other community partnerships. Most recently, the Army joined with its sister services to sign the first-of-its-kind state-wide IGSA with the Texas Department of Transportation to provide operation and maintenance support for on-base roads, curbing, stormwater drainage, traffic lights, and bulk materials purchases.

The ten-year IGSA contract for Forts Hood and Bliss is expected to save the Army over \$3.78 million per year.

Environmental Stewardship

The Army's Environmental Program helps maintain access to testing and training lands and ensures stewardship of natural and cultural resources through compliance with conservation laws, including the Endangered Species Act, the Sikes Act, the NHPA, and the Native American Graves Protection and Repatriation Act, among other statutes. The Army manages the largest number of endangered species and historic properties in DoD. The Army has 261 threatened and endangered plant and animal species on 146 installations, 1.3 million acres of wetlands, 85,119 archeological sites, 152 Native American sacred sites, and 19 National Historic Landmarks. Due to the magnitude of our resources and our success in achieving positive outcomes in environmental compliance, the Army plays a leading role among the military departments in environmental stewardship.

The Endangered Species Act was enacted 50 years ago. Army biologists in partnership with the U.S. Fish and Wildlife Service, and state fish and game offices have been managing lands and natural habitats for 50 years with no net loss to the mission and have worked to recover species where possible. Part of this success is attributable to the Army's Compatible Use Buffer Program (ACUB), which is marking its 20th anniversary. The program provides innovative tools to provide flexibility for training and testing while carefully managing endangered species and other natural resources. One major success story is the progress toward recovery of the endangered red-cockaded woodpecker in the Southeastern U.S. Through ACUB and the related OSD Readiness and Environmental Protection Integration Program, the Army employed innovative tools, resources, and partnerships to accelerate species recovery, to the point where, the red-cockaded woodpecker is being proposed for down listing from endangered to threatened. To date, the Army, through ACUB, has preserved over 760,000 acres in 28 states. The Army and its partners have invested over \$1.2 billion to

support the protection of natural resources. These investments will continue to help the Army, ensuring we are well-positioned to protect the mission while remaining good stewards of the environment.

The Army recognizes that external pressures threaten long-term viability of our training ranges and lands. To help mitigate this threat, the Army participates in the Sentinel Landscapes Partnership. This program, in conjunction with our federal partners, allows the Army to strengthen military readiness and address a changing climate and other natural resource challenges. Participating in the Partnership over the last 10 years has increased our installation and surrounding community resilience.

Remediate Contaminants

The Army's commitment to meeting its people's needs includes compliance with environmental laws such as the Clean Air Act and the Clean Water Act, as well as environmental restoration activities. The Army currently manages close to 5,000 environmental permits. The Army conducts its cleanup program in accordance with the Defense Environmental Restoration Program and subject to, and in a manner consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). As a result of our commitment to addressing historic releases of hazardous substances and pollutants or contaminants, the Army has completed response actions at over 90% of the sites in our inventory. Our efforts address risks posed by the release of hazardous substances, pollutants and contaminants into the environment and hazards associated with munitions used to train our forces to defend the nation. The Army's goal is to complete its cleanup actions to ensure protection of the health of our soldiers, their families, and the community surrounding our installations, as well as the environment.

The Army has been taking action to address per- and polyfluoroalkyl substances (PFAS) since 2016, using a three-pronged approach focused on identifying and cleaning up past releases, testing for, and mitigating risks from PFAS in drinking water,

and mitigating the use of aqueous film-forming foam (AFFF). As of December 31, 2022, the Army is conducting PFAS investigations at 341 installations in the United States and its territories. We continue to test our Army-owned drinking water systems regularly and take immediate action in instances where measured levels exceed 70 parts per trillion. Finally, the Army's use of AFFF is currently limited to fire emergencies, and we have developed a transition plan in accordance with the FY 2020 NDAA-AFFF replacement with transition beginning after qualified fluorine-free products become available in late 2023. The Army will most likely seek DoD support for a waiver to ensure a methodical transition that does not affect mission activities.

Of the 341 facilities identified as requiring further PFAS investigation, the Army has completed the first phase of investigations at 180 facilities, with investigations underway at the remaining 161 facilities. Eighty facilities have already moved to the next, more advanced, phase of investigation. Through its CERCLA efforts to date, the Army has identified impacts to off-installation drinking water outside six installations and has completed removal actions to cut off exposure through measures such as well closure, providing bottled water, municipal water connections, or installation of treatment. The Army's PFAS-related drinking water and cleanup information is available to the public via the Army's and DoD's websites that are updated regularly.

The Army is committed to fulfilling our cleanup responsibilities and will remain transparent about our progress with both Congress and the public. We will continue to engage in robust community outreach efforts to inform stakeholders and solicit feedback.

Conclusion

Building the Army of 2030 begins on our installations. We need ready and resilient installations to ensure our soldiers are properly trained and can deploy anywhere in the world to fight and win our nation's wars. For installations, the future is now. Your continued support helps us realize these important goals.

Thank you for the opportunity to present this testimony and for your continued support of our soldiers, civilians, soldiers for life, and their families, caregivers, and survivors.

The Honorable Rachel Jacobson
Assistant Secretary of the United States Army
Installations, Energy and Environment

Ms. Rachel Jacobson was confirmed by the U.S. Senate on March 15, 2022, and sworn in as the 17th Assistant Secretary of the U.S. Army for Installations, Energy and Environment (ASA(IE&E)) on April 4, 2022.

As ASA (IE&E), she is the primary advisor to the Secretary of the Army and Chief of Staff of the Army for all matters related to Army installation policy and oversight, and coordination of energy security and management. In addition, she is responsible for policy and oversight of sustainability and environmental initiatives; resource management, including design, military construction, operations and maintenance; Base Realignment and Closure (BRAC); privatization of the Army real estate portfolio and installation Safety and Occupational Health programs.

Ms. Jacobson is an experienced environmental lawyer, having previously served at the Department of Defense during the Obama-Biden Administration as the Deputy General Counsel for Environment, Energy and Installations. Prior to joining DoD, Ms. Jacobson served as a political appointee at the Department of the Interior, first as Principal Deputy Solicitor and then as Acting Assistant Secretary for Fish and Wildlife and Parks.

Ms. Jacobson, who came to the Army position following five years in private practice at the law firm Wilmer Hale in Washington, D.C., spent the majority of her career as a trial lawyer and supervisor at the U.S. Department of Justice in the Environment and Natural Resources Division. She also ran a conservation program at the National Fish and Wildlife Foundation before joining the Obama-Biden Administration.

Ms. Jacobson is a member of the bars of Illinois, D.C. and Massachusetts, and the American College of Environmental Lawyers. She received an undergraduate degree in economics from Washington University in St. Louis, and a law degree from Boston University School of Law. A native of Chicago, Ms. Jacobson resides in Washington, D.C.

DEPARTMENT OF THE AIR FORCE PRESENTATION
TO THE SUBCOMMITTEE ON READINESS
COMMITTEE ON ARMED SERVICES
UNITED STATES HOUSE OF REPRESENTATIVES

SUBJECT: DEPARTMENT OF THE AIR FORCE ACTING ASSISTING SECRETARY OF
THE AIR FORCE FOR ENERGY, INSTALLATIONS, AND ENVIRONMENT WRITTEN
TESTIMONY FOR ENERGY, INSTALLATIONS, AND ENVIRONMENT PROGRAM
UPDATE

STATEMENT OF:

MR. EDWIN OSHIBA
ACTING ASSISTANT SECRETARY OF THE AIR FORCE
ENERGY, INSTALLATIONS, AND ENVIRONMENT
DEPARTMENT OF THE AIR FORCE

NOT FOR PUBLICATION UNTIL RELEASED
BY THE COMMITTEE ON ARMED SERVICES
UNITED STATES HOUSE OF REPRESENTATIVES

FEBRUARY 28, 2023

Introduction

Chairman Waltz, Ranking Member Garamendi, and distinguished members of the Subcommittee, thank you for the opportunity to discuss Department of the Air Force (DAF) energy, installations, and environment programs.

Our installations remain the platforms from which we enable and project combat power in and through the air and space domain. Every DAF mission starts and ends on an installation. We train and equip for joint operations, generate readiness, test new weapon systems, control and sustain air and space weapon systems, and provide safe, healthy communities for our Airmen, Guardians, and their families at our Air and Space Force installations. DAF installations also serve as key nodes in a global network of operating locations enabling Joint Force mission success around the world. Hence, the readiness, resiliency, and sustainability of installations are matters of strategic importance.

For nearly 80 years, we have operated our installations with nearly unprecedented freedom of action. However, as the National Defense Strategy (NDS) clearly describes, the homeland is no longer a sanctuary. Our Nation faces the nexus of complex challenges: the rise of great power competition with China and Russia; the increasing complexity of multi-domain threats; the competition for access to resources; and the increasing rate of technology change. We must ensure our installations are resilient, optimized, and operationally efficient to successfully defend the homeland; prevail against the full range of man-made and natural threats; deter strategic attacks against the United States, our Allies, and our partners; deter aggression and be prepared to prevail in conflict when necessary; and build a resilient Joint Force and defense ecosystem. We recognize the foundational capability our installations provide in advancing these priorities through integrated deterrence, campaigning and building enduring advantages.

In the face of these challenges, we made hard choices to prioritize efforts focused on integrated deterrence in an environment of shrinking advantage against aggressive competitors, operating in an evolving security environment. Last year, we began the transition required to meet the challenge of pacing adversaries through a focus on seven operational imperatives. This year's budget reflects continued modernization efforts in a resilient, effective space order of battle; operationally-optimized Advanced Battle Management System; achieving Moving Target

Indication at scale; development and fielding of a Next Generation Air Dominance family-of-systems; cost-effective, resilient forward basing; global strike capabilities built around the B-21 Raider; and expeditious transition to a wartime posture.

In support of these imperatives, the DAF Military Construction (MILCON) program continues to prioritize nuclear enterprise modernization and Combatant Command (CCMD) infrastructure support with an emphasis on the European and Pacific theaters. The Facilities Sustainment, Restoration and Modernization (FSRM) portfolio remains focused on sustaining our existing infrastructure. Furthermore, we preserve the well-being and quality of life of our service members and their families through investments in housing, dormitories, and child development centers (CDCs). We also fund high return-on-investment operational energy initiatives, which increase our readiness and provide more combat capability for every gallon of fuel consumed—"lethality per gallon." We remain committed to sustaining the DAF's power projection, enabling platforms, and searching for operational energy improvements to increase range and operational capability. We appreciate the continued partnership with Congress to ensure Air and Space Forces are well-postured to compete, deter, and win.

Operational Energy

We are pursuing policies, investments, and activities that increase our agility and "lethality-per-gallon," while improving our ability to field and sustain a combat-credible force now and in the future. By reducing the energy demand of our aircraft, we can increase our range and time on-station, improve our fuel-offload capability, and boost engine performance. Diversifying energy sources also increases our capability. Current events in Ukraine highlight how energy can be used as a weapon and present significant logistical risk to the warfighter.

As a critical enabler to our global mission, operational energy (aviation fuel) comprises over 80% of the \$6 billion annual DAF energy bill. To remain ahead of our adversaries in a complex and ever-changing battlespace, we continue to develop a more agile and optimized approach to generating sorties and providing Airmen with fuel when and where they need it. Our FY23 enacted budget provided \$181 million in funding for the research, development, acquisition, and operation of modern technologies, data analysis, and innovative process improvements that will enhance our combat capability and mitigate operational risk to the warfighter.

Optimal Operations Planning and Data Collection

We continue to collaborate with stakeholders across the DoD and industry to implement efficiency best practices, support modernized information systems and software applications, and collect and analyze data to optimize mission planning and execution, enable decision advantage, and maximize combat capability. Our data analysis capabilities and technologies facilitate greater visibility into Air Force aviation fuel use, increase stakeholder collaboration, and have uncovered numerous opportunities to optimize aircraft operations. We can now assess how energy optimization affects combat capability in warfighting scenarios. We have demonstrated that employing more efficient air refueling assets not only decreases fuel demand and sortie requirements, but also enables greater fuel offload. In some cases, the benefit to the warfighter overall may even double the efficiency improvement to tankers operations and enable greater mobility capacity to support force generation and critical deployment timelines.

We invested in 21st century planning software to optimize how we schedule aircrew to optimize readiness and allocate aircraft to best accomplish mission requirements. *Puckboard*, a real-time collaborative squadron operations platform, provides scheduling capability to aircrew anywhere in the world, on or off the DoD network, and is now available to over 24,000 service members and 550 organizations, and counting. *Puckboard* integrates digital forms with programs of record and aims to increase training events accomplished per sortie through its AI Solver. Additionally, we continue to enhance the tanker planning tool *Jigsaw* with optimization and auto-planning features, further streamlining aerial refueling schedules and reducing planning process times for the Air & Space Operations Center weapon system. The automation capability will reduce planning time to seconds or minutes rather than hours and increase scheduling efficiency by at least 10% over the baseline. This is equivalent to supplying fuel to approximately 250 aircraft with 5 fewer tankers, enabling crew reallocation and saving approximately 400,000 gallons of fuel per week.

We are also working to optimize cargo loading and planning of global airlift missions with partners in Air Mobility Command and the Air Force Institute of Technology. By better utilizing allowable cargo space, the DAF can use fewer aircraft, and therefore use less fuel, to accomplish the same mission. For example, we are working with Air Force Research Laboratory's Future Force Energy and Power Office to build and test the Vertical Stacking Pallet

prototype, an Airmen-developed technology that allows cargo to be stacked vertically within mobility aircraft, enabling more efficient use of cargo space. The DAF is also funding Aerial Port of the Future, a suite of mobile applications and technology improvements to legacy systems supporting aerial ports and the Global Air Mission Support System.

Furthermore, as part of our effort to streamline operations and increase aircraft range and capability, Air Mobility Command Headquarters launched the Mission Execution Excellence Program (MEEP), a pilot program to incentivize optimized flying on the largest fuel consumers in the Air Force, heavy mobility aircraft. MEEP encourages Airmen to increase their use of efficient flying best practices through direct and indirect incentives—and importantly, does not negatively impact mission and training requirements. In fact, initial estimates show that employing MEEP can improve energy intensity—or the mission effectiveness per gallon of fuel—by 3%. Based on performance during the 2022 pilot phase, the two participating MEEP C-17 wings are on track to reduce fuel consumption by over one million gallons per year.

Finally, under the authority provided by Congress in Title 10 USC 2912, the DAF is implementing the Operational Energy Savings Account (OESA) program to further incentivize energy-aware behavior and processes. By documenting fuel savings from previous operational energy initiatives, the OESA program allows those funds to be re-invested in other optimization efforts making it a self-sustaining program. In 2021 and 2022, we recovered \$24 million in fuel cost savings derived from C-17 and C-5 operational efficiencies and tanker planning in the USCENTCOM AOR. We fully implemented the OESA program in 2022, funding a multiple-MAJCOM virtual reality aircraft maintenance training effort and delivering electric aircraft positioners to support Air Force Special Operations Command operations.

Weapon System Sustainment

We depend on the readiness of our weapon systems to maintain global reach and power. Through partnerships with the aviation and commercial industries, we identify innovative solutions to modernize legacy aircraft and weapon systems while maintaining our lethality. By leveraging infrared imaging and laser scanning methods of engine compressor blades for the inspection and rework of engine components, paired with innovative coatings of engine compressor blades, we are ensuring overhauled legacy engines deliver optimized engine performance for the DAF. The commercial aviation industry is realizing fuel savings of 2-4% for

the combined execution of these processes. Our updated nucleated foam engine washing pilot programs provide significant operational impacts and energy consumption efficiencies.

Specifically, the Air Force Special Operations Command CV-22 and AC-130J programs return impressive benefits including longer engine life, improved performance, and decreased maintenance requirements. We are expanding this pilot program to KC-135s and C-17s to explore added benefits to the DoD's two largest aviation fuel consumers. Additionally, we added detergent to our existing engine water wash contracts for B-52, C-5, E-3, and KC-135 fleets with additional analysis needed to compare the multiple programs to inform future decisions.

Fuel Logistics and Alternative Fuels

We remain engaged with commercial stakeholders such as the Commercial Aviation Alternative Fuels Initiative, International Civil Aviation Organization, our Operational Equipment Manufacturer (OEM), and other government agencies, to maintain awareness of the research, development, testing, certification, and commercialization of "drop-in" alternative aviation fuel in the ASTM International approval process. We continue to team with DoD and Air Force stakeholders, such as the Defense Logistics Agency-Energy, Air Force Petroleum Office, Air Force Research Laboratory, and Air Staff, as well as international allies and partners, to monitor alternative fuel production, pricing, and commercial use to better position the DAF to support changes in the defense alternative fuels strategy and provide operational flexibility based on fuel availability in specific regions and circumstances. Additionally, we leverage our research and analysis to better identify logistical gaps and propose resiliency improvements to the jet fuel supply chain in energy-constrained environments.

Energy-Informed Wargaming

Through wargaming and analysis, we analyze how fuels and energy logistics support requirements could affect combat operations in an evolving threat environment. Realistically addressing operational energy challenges helps inform leadership decisions essential to achieving desired levels of lethality, readiness, and interoperability. Results from the Air Force's Global Engagement and Long Duration Logistics Wargames and Joint Forces Energy Wargame highlighted the criticality of energy distribution infrastructure and the necessity for energy planning across all phases of an operation. Joint-service wargames such as these allow

participants to analyze the jet fuel supply network in an energy-constrained environment and reduce operational risk to joint logistics.

Through modeling and simulation tools, we increased our awareness of future energy requirements and the potential for fuel supply gaps, disruptions, and adversarial threats. We continue to develop methods to analyze our strategic energy posture and the unique challenges in the Western Pacific and European theaters to inform infrastructure and capability investments to enhance operational readiness.

Acquisitions and Capability Development

We work closely with the Air Force Research Laboratory and Defense Innovation Unit to push the technology envelope and help advance key disruptive technologies to maximize operational energy efficiency and outpace our competitors. We help guide acquisition policy to address operational energy requirements associated with new platforms and major modification programs through the Energy Key Performance Parameter and Energy Supportability Analysis. We also play an active role in the capability development process, which helps ensure future systems will not only be optimized for energy considerations, but also will be sustainable in their intended operational environments.

We have invested in and advocated for several technologies and platforms that increase range or endurance and optimize fuel use for numerous critical missions. For example, drag reduction initiatives on legacy aircraft include C-17 Microvanes, KC-135 Vertical Wipers, C-17 and KC-135 Active Winglets, and C-17 Engine Pylon Fairings, among others. Together, these technologies equate to improved aircraft range and capability, reduced greenhouse gas emissions, and tens of millions of dollars' worth of fuel cost savings.

One of the most impactful projects the DAF is exploring is the transformational design of blended wing body (BWB) aircraft, which is expected to increase fuel efficiency of large aircraft by 30% (with today's engines). For an aerial tanker, this can equate to nearly a doubling of mission radius at a given fuel offload, or a doubling of offload at a given radius. This platform demonstration project aims to accelerate future flexibility for tanker, cargo, and bomber fleets while leveraging significant private capital to maximize DoD return on investment. The project aims to complete the first flight of a full-scale BWB aircraft by December 2026 and completion of initial flight testing by September 2027.

Installations

We advance our commitment to optimizing installation investment through implementing the Infrastructure Investment Strategy (I2S), increasing senior leader oversight of the portfolio, and pursuing reforms within our MILCON program. First introduced in 2019, the I2S is the Department's long-term strategy to cost-effectively modernize and restore infrastructure readiness, improve the resiliency of mission-critical nodes, and drive innovative installation management practices. We are refining and refreshing our strategy and expect to complete an update by late 2023.

We oversee I2S implementation efforts through recurring Infrastructure Councils and Infrastructure Program Management Reviews to assess resourcing and asset management practices on infrastructure readiness. The Council developed a series of metrics that quantify the impact of I2S policies and investment decisions on infrastructure condition, facility space use, and MILCON cost growth. Regular assessments of the I2S allow senior leaders to make timely decisions, which affect program execution and future budget decisions.

Military Construction

In FY23, Congress provided the DAF nearly \$4 billion in MILCON funds. I would like to thank Congress for the funding, which helps mitigate rising costs due to inflation and supply chain issues, and fund critical priorities. This funding supports the DAF's commitment to fulfilling NDS requirements, posturing for the future high-end fight, and taking care of our Airmen, Guardians, and their families, caregivers, and survivors. We continue to focus on the Pacific and European theaters and modernizing the nuclear enterprise, as well as support fielding new weapon systems to ensure the DAF remains the world's premier Air and Space Force.

Balanced with combatant command priorities and new mission beddowns, our MILCON program also recapitalizes facilities that have outlived their useable life or no longer meet mission requirements.

Planning and Design (P&D) reinforces program stability and consistency, making it the central focus of the DAF MILCON program. Sufficient P&D enables projects to progress rapidly through design and meet maturity criteria for admissibility into the program, provides more accurate cost estimates, and maximizes the opportunity to award projects in the year of appropriation. With the \$295 million in P&D funds provided in FY23 appropriations, the DAF

intends to fully fund designs for our planned FY24 and FY25 projects, initiate design for FY26 projects, and move forward on designs for 28 projects at 19 separate locations inserted into the FY23 legislation by members of Congress. The outcome of our two-year budget lock policy is a stable MILCON program that allows us to efficiently use P&D for future projects.

Sentinel Program

The Sentinel program will recapitalize the ground-based leg of the Nuclear Triad. We are investing in facilities supporting 450 Intercontinental Ballistic missile Launch Facilities and supporting infrastructure across three Wings in five states to reach Full Operational Capability in the 2030s. The projects supported in the FY23 enacted legislation will enable the Sentinel MILCON program to remain on schedule and align with weapons system deployment milestones. This includes the first phase of land acquisition associated with the F.E. Warren AFB missile fields. The US Army Corps of Engineers (USACE) will begin formal negotiations with landowners at F.E. Warren AFB in the second quarter of FY23. The USACE target is to complete negotiations with landowners who own property within the Operational Weapon System Article (OWSA) requirement in the first quarter of FY24. This phase of land acquisition will allow the program to meet the OWSA weapon system deployment schedule. The DAF appreciates your support in FY23 with the \$34 million land acquisition MILCON funding and your continued support in future years.

Natural Disaster Recovery Efforts

The DAF will make use of the \$360 million Congress provided in FY23 to address inflationary and supply chain cost increases in our Natural Disaster Recovery (NDR) program. To date, we awarded 43 MILCON projects (approximately 75% of the NDR program) totaling over \$2.9 billion. In calendar year 2022, we awarded 28 projects, totaling \$2 billion. Through this program, we are improving mission readiness and resilience at Tyndall AFB, FL and Offutt AFB, NE.

Facility Sustainment, Restoration, and Modernization (FSRM)

We view the FSRM and MILCON programs as interdependent; together, these two funding streams serve as the foundation of sustainable DAF installations. FSRM provides a non-

MILCON pathway to repair facilities and infrastructure, maximizing their lifespan. In FY23, Congress provided the DAF over \$5.3 billion in FSRM funding. Our priority for FSRM continues to be sustaining our existing infrastructure with increased emphasis on quality-of-life projects (i.e. dormitories, CDCs) and our operational and training infrastructure. Our I2S drove changes in how we execute the FSRM program by prioritizing projects based on mission risk and timing investments at the optimal point in the asset lifecycle.

Child Development Centers and Dorms

We strive to provide a high quality of life for our members and their families, and at the heart of that goal is affordable, accessible childcare for our Airmen and Guardians and safe, high-quality dorms for our unaccompanied members. The DAF is using a two-prong programmatic approach to improve CDCs: targeted investments in FSRM and MILCON projects to address facility condition concerns and increase capacity. In FY23, we are spending \$7.6 million in FSRM funding on four CDC projects, and in FY24 we intend to commit \$50 million in FSRM funds for CDC requirements. For MILCON, three of our top priority CDCs—JBSA-Randolph, TX; Scott AFB, IL; and Wright-Patterson AFB, OH—were authorized in the FY23 NDAA and funded within the FY23 appropriations totaled \$98.4 million. The DAF also received \$2.7 million in MILCON Planning and Design (P&D) funds to start designing a CDC at Luke AFB, AZ, which will posture this project for future execution. The DAF will strategically use a portion of the \$370 million inflation offset funding to address cost increases in several previously authorized and appropriated CDC projects.

Equally important to us is providing unaccompanied service members high quality housing in our dormitory campuses. Commanders' responsibilities include protecting the health and safety of unaccompanied Airmen and Guardians. It is their responsibility to enforce inspection criteria to identify and report conditions requiring immediate and future maintenance. Funded from the DAF FSRM account, the investment strategy for dormitories focuses on sustainment, restoration, and modernization of these facilities. This enables the DAF to focus MILCON funds to replace dormitories in poor condition beyond economical repair and installations with dormitory deficits. We intend to invest an average of \$220 million per year in FSRM funds across the five-year Future Years Defense Program to repair and improve the

condition of the current inventory of dormitories. This level of investment is a significant increase of over dormitory investments in recent years.

DAF Basing

Our strategic basing process integrates strategic planning, resource allocation, and installation platforms to optimize basing of individual missions while ensuring overall strategic posture for readiness and power projection. Total Force synchronization enhances posture in basing of flying and non-flying missions while guaranteeing training, readiness, and operational capabilities to COCOMs. With tiered authorities, DAF leadership is engaged at key decision nodes to align actions with the NDS, while notifying Congress at significant decision points.

We appreciate congressional interest and legislative language supporting Military Family Readiness, to include the FY23 additions of healthcare and housing, alongside the existing licensure portability in making certain basing decisions. This focus affirms the central importance of families and caregivers as a key aspect in recruitment and retention, as they reside in the very same communities which support our installations. Additional engagement by states and localities continues to be a critical facet for providing adequate and accessible healthcare and housing, while also bolstering against encroachment around installations, airfields, and ranges.

Housing, Construction, Operation and Maintenance

The DAF Housing program provides for housing construction, planning and design, and operations and maintenance (O&M) while focusing on eliminating inadequate housing from the DAF inventory and correcting health and safety deficiencies. In addition to enabling planning studies, design for future construction projects, renovation of existing DAF-owned homes, the military family housing construction program also supports the restructure of privatized housing projects.

Our military family housing O&M program sustains, improves, and modernizes our inventory of approximately 15,200 DAF-owned family housing units and provides enhanced oversight of over 52,000 privatized homes. However, the high cost of construction requires solutions within the DAF family housing construction program to achieve the full scope of other projects. Combined, the family housing O&M and construction programs will ensure continued support for the housing needs of Airmen, Guardians, their families and caregivers, as well as our Army, Navy, and Marine Corps teammates living in DAF owned and privatized family housing.

Privatized Family Housing

Quality, affordable housing has a direct correlation to recruitment, retention, and readiness. Hence, we remain focused on improved oversight, long-term financial health, and sustainment of the housing inventory. We are committed to ensuring Military Housing Privatization Initiative (MHPI) projects provide safe, quality, and well-maintained housing where military members and their families and caregivers will want and choose to live.

We continue our efforts to improve our privatized housing portfolio and address the remaining elements of the MHPI reforms set out in the FY 2020-23 National Defense Authorization Acts (NDAA). We made significant progress to implement reforms to enhance our oversight of privatized housing and hold MHPI companies accountable for providing quality housing. Specifically, several congressionally mandated NDAA provisions were implemented throughout various DAF housing programs including:

- FY 2020 NDAA Section 3011: We collaborated with the private-sector MHPI companies to universally agree to adopt 18 rights set out in the MHPI Tenant Bill of Rights. All but two companies have either implemented or agreed to implement all 18 of these rights. While the remaining two companies do not yet provide the MHPI Tenant Rights to dispute resolution, or rent segregation, these projects remain fully compliant with their project legal agreements with DAF and associated state and local landlord requirements. As Congress has recognized, applying many of the Tenant rights at existing MHPI housing projects requires voluntary agreement by the MHPI companies. The DAF continues to seek voluntary agreement of the remaining two MHPI companies by working to resolve their remaining concerns and achieve their full implementation of all 18 Tenant Rights at their MHPI projects at the following installations: Joint Base Elmendorf Richardson, Alaska and Wright Patterson AFB, Ohio
- FY 2020 NDAA Section 3036: We implemented the amended section 606 payments to MHPI Projects to focus on the most urgent needs of underfunded MHPI projects and ensure the projects invest these funds investing appropriately to safeguard long-term project viability.
- FY 2020 NDAA Section 3051: We began the process to complete standardized privatized housing and government-owned housing inspections and assessments at all

locations, using DoD's uniform housing standards, completing inspections at 15 installations in CY22.

- FY 2022 NDAA Section 2813: We verified the appropriate application of Disability Laws and Collection of Modification Costs requirements are documented in existing MHPI projects' transaction documents. These requirements ensure the projects make reasonable accommodations for any resident with a disability.

In 2020, we added 218 government positions across the privatized housing program, increased inspections, provided additional training to housing personnel, and revamped housing governance. We continue to maintain Resident Councils for two-way communication between the residents and installation and project owner leadership. We then utilize feedback from tenant satisfaction surveys to develop action plans for improving the residents' experiences and encourage our Airmen and Guardians, and their families to engage with Resident Advocates to help resolve any disputes and improve communications among all relevant DAF stakeholders.

We also expanded our metrics for assessing the health of the privatized housing portfolio, particularly with regards to resident satisfaction, maintenance quality and responsiveness, and property management operations. Most of our private partners meet or exceed DAF standards as prescribed in our metrics. However, when we identify concerns with operational performance, we have placed a small number of private partners on Community Action Plans, or if more systemic, on Performance Improvement Plans with milestones and schedules. The goal is to remedy deficiencies and ensure our military families receive quality service and housing.

Some privatized housing projects will require financial restructuring to continue to remain financially stable and market-comparable. The restructure goals are to ensure the projects can fully fund operational expenses, debt servicing, and sustainment of the homes for the life of the lease and also fund reinvestment needs during the mid-term reinvestment period. We plan to include DAF investments for select MHPI project restructures in future President's Budget requests at select locations.

Community Partnerships as a Solution for Infrastructure Divestment and Management

We apply commercial best practices and innovative solutions to base infrastructure asset management through creative partnerships that (1) monetize underutilized/non-excess land and

buildings; (2) enable proactive divestment and disposition strategies to offset required recapitalization of mission critical assets; and, (3) decrease or eliminate the risk and total cost of ownership of asset classes that are common to defense communities, state and local government, or private industry. Noteworthy examples of this capital investment strategy are:

- **Edwards Air Force Base Solar Enhanced Use Lease:** Out-leased 2,600 acres of underutilized/non-excess land, providing 464 megawatts (MW) of energy to the California Grid, 3,287 MWh of battery storage capability, 320,000 tons per year of CO₂ reduction, and generating \$75.8 million in In-Kind consideration for the base to offset unfunded operational and capital requirements.
- **Fairchild Air Force Base Joint Use Indoor Firing Range:** Entered into a historic first-of-its-kind IGSA with Spokane County, WA to obtain exclusive access to a new state of the art firing range funded, constructed, owned, and operated by the county. This enables active, reserve, and guard forces at Fairchild to complete small arms training, qualification and proficiency firing requirements at an average estimated annual savings of \$1 million over a 10-year contract.
- **Joint Base Cape Cod Water/Wastewater Utility Systems Exchange.** We executed a first-of-its-kind exchange agreement which will divest water and wastewater utility systems owned by the Air Force and operated by the Massachusetts Air National Guard, 102d Intelligence Wing (102d IW) to a private utility operator in exchange for construction of facilities of equal or greater value than the FMV of the divested assets. This innovative approach will support missions on the base more affordably with long term price certainty and provide the 102d IW with up to \$60 million of cost avoidance of future capital investment.

Installation Resilience

Our Installation Energy Program focuses on ensuring Air and Space Force installations are truly resilient to the broad range of threats from adversaries, changing climate, and cyber-attacks. We define resilience within the “5 Rs” of robustness, redundancy, resourcefulness, response, and recovery. Installation Energy Plans apply the “5Rs” to assess gaps and prioritize energy, water, and climate projects to ensure mission readiness. The “5Rs” help describe how a system is prepared for crises using the preventative attributes of robustness, redundancy, and

resourcefulness, as well as how the system functions during crises using the performance attributes of response and recovery.

Adversarial threats and natural hazards pose a growing risk for prolonged power outages for installations. Using a mission thread perspective, we are working to identify key nodes on and off installations that, in a denial-of-service scenario, may result in a significant impact on our ability to deliver key capabilities. A comprehensive understanding of mission requirements, current system operations, accurate reporting, and historical outage data assist in identifying possible service vulnerabilities. We strive to mitigate operational impacts from disruptions to energy and water through increasing investment in and improving maintenance of energy systems.

Enhancing Energy and Water Resilience

Reliable access to sufficient, quality power and water enables our operational and training missions. We view energy and water as essential and linked resources; our energy initiatives consider both. Our vision of “Mission Assurance through Energy and Water Assurance” focuses on sustaining warfighting capabilities, while simultaneously optimizing resource use through enhanced planning, technology, and process improvements. We assess near and long-term energy and water needs based on resilience, cost considerations, and the opportunity to leverage clean sources.

We conduct Energy Resilience Readiness Exercises (ERREs) to help installations assess mission readiness during a controlled denial of service. Under an ERRE, also referred to as “pull-the-plug” or “black start” exercise, an installation intentionally shuts down its primary power for 8-12 hours to test its onsite backup power systems and identify how infrastructure and mission interdependencies might play out during a denial of service. ERREs serve as a cornerstone of both mission and energy assurance efforts across the DAF by actively testing key enabling systems under “blue sky” conditions to identify gaps in energy, water, and mission capabilities. In 2022, we conducted ERREs at seven installations, including its largest regional exercise, to bring the total number of ERREs conducted to 13. This large-scale regional exercise was conducted at three Space Force installations in Colorado. It uncovered valuable lessons learned for each individual installation as well as insights regarding inter-installation capabilities

for USSF. Looking ahead, we will continue to execute five ERREs per fiscal year through at least FY27.

Our installations are increasingly automated with interconnected control systems that, when vulnerable, open our multi-domain operations to adversarial cyber threats. In compliance with the FY17 NDAA Sec. 1650, we completed assessments of DAF critical infrastructure to identify vulnerabilities. These assessments exposed risks to missions we unknowingly accepted, and validated the mitigation measures we are already pursuing to increase control systems' cybersecurity and resiliency. In March 2021, we published our DAF Strategic Plan for Control Systems detailing a unified and enduring approach to protecting and defending these control systems which assure our critical infrastructure and mission capabilities.

Per the FY22 NDAA (Sec. 2833), we completed the military installation resilience component of a master plan, known as an Installation Climate Resilience Plan, at two installations in CY22: Vandenberg Space Force Base and Joint Base Langley-Eustis.

Managing Water Resources

We are placing greater emphasis on water resilience, recognizing that water resources are finite, yet essential to sustained mission capabilities. Water availability faces many threats, including aging infrastructure, scarcity, malicious attacks, natural hazards, changes in climate, rising costs of supply, quality issues, and encroachment. We take a risk-based approach to water management and links water security directly to mission assurance.

Current water initiatives include increasing transparency into mission needs and readiness, comprehensively identifying and assessing water risks, expanding external stakeholder engagement, analyzing capability gaps, and developing mitigation strategies. We created an Installation Water Dashboard, an interactive data repository for all installations including Active, Guard, and Reserve to streamline water data and reporting to support our goal of determining water vulnerabilities and aid future water resilience planning. The Dashboard enhances our efforts to support mission assurance for all installations.

Conducting Installation Energy and Water Planning

Installation Energy Plans (IEPs) utilize a standardized framework based on the “5Rs” to integrate strategic guidance, plans, and policies into a holistic roadmap for each installation to

advance mission critical energy and water goals. Through 2022, we completed 70 Installation Energy Plans, including 49 at our priority installations and the top 75% of energy-consuming installations. These plans resulted in developing over 150 resilience initiatives to address installation energy and water vulnerabilities identified through ERREs, and mission thread analyses. By June 2023, we will complete IEPs at all U.S. priority installations and the top 75% of energy-consuming installations. The IEPs will result in improved installation energy and water resilience.

Financing Energy and Water Infrastructure

The DAF Installation Energy Program does not have a dedicated budget line; rather, it relies on direct investment, third-party financing, and innovative funding solutions. Direct investment typically comes from FSRM, MILCON, or the Energy Resilience and Conservation Investment Fund (ERCIP). Third-party financing and other contracts include vehicles such as Energy Savings Performance Contracts (ESPCs), Utility Energy Service Contracts (UESCs), and Utilities Privatization contracts (UP).

We shifted the focus of our installation energy program from being solely concentrated on conservation to incorporating solutions for achieving resilience. This mission-focused, climate-informed approach is evident in our efforts to leverage the authorities provided by Congress to use ERCIP funds on third-party financed projects. For example, we are using ERCIP funds at Vandenberg Space Force Base to develop a microgrid with battery storage. The energy will be provided through a solar power purchase agreement and the commercial grid.

Resilient, Innovative Infrastructure

We are implementing innovative solutions to build energy efficient and resilient systems for the installations of the future. These efforts include pilots to accomplish 100% carbon-pollution free electricity and 100% zero emission non-tactical vehicles by fiscal years 2030 and 2035, respectively; exploring alternative energy opportunities through nuclear, geothermal, and solar energy means; and changing the overall DAF approach for future energy initiatives. We are exploring pilot projects that will utilize new or non-traditional design and construction practices to construct hyper-efficient facilities. Efficient design and construction practices include passive heating and cooling, super-efficient HVAC systems, air and ground source heat pumps, tight and

efficient building envelopes. These initiatives will reduce energy consumption and free up resources for operational imperatives.

Additionally, we identified Eielson Air Force Base, AK as the preferred location for our first nuclear micro-reactor pilot site due to the base's existing infrastructure, arctic location, and critical mission resilience requirement. We are working with DLA-Energy to execute a firm-fixed price power purchase agreement under 10 U.S.C 2922a with a third-party developer. The developer will own, operate, and maintain the microreactor and deliver zero emission electricity on Air Force property in exchange for long-term purchase of the generated energy. The DAF and DLA released a formal request for proposal in September 2022 to attract the best possible commercial partner for this project. Once completed, the first of its kind micro-reactor at Eielson AFB is expected to produce 1-5 MWs of energy to supplement current installation energy sources as a redundant resilience measure, which will help ensure mission critical infrastructure is protected against physical and cyber security threats. We work closely with Alaskan state, local and Tribal Nation leaders as it aims to reach full operational capability by 2027.

We seek to leverage geothermal technological innovation from the industry to meet installation electricity needs at Mountain Home AFB in southwest Idaho and Joint Base San Antonio in southcentral Texas. We are working with the Defense Innovation Unit to administer a competitive down-selection process for a geothermal pilot under a sole-source, follow-on contract vehicle to support our intent to implement the technology at other locations across the enterprise.

Finally, with more than 60,000 vehicular assets across installations, we need to be prepared for changes in the direction of the commercial market to ensure we continue to have access to the tools and equipment we need for our mission. As the industry transitions to electric vehicles, we look at fleet electrification as an opportunity to improve resiliency, decrease operation and maintenance costs, and embrace cutting edge technologies. In 2021, we identified Joint Base Andrews and Joint Base McGuire-Dix-Lakehurst as pilots for the use of electric vehicle technology. In 2022, we identified an additional 16 installations for the next phase of the pilot. We are incorporating lessons learned from different geographies, utility partners, acquisition pathways, mission type, and weather into a comprehensive planning guidance that

will provide a step-by-step process to incorporate vehicles into existing fleets. This will include a catalog of acquisition pathways to secure charging infrastructure.

Environmental Stewardship

The safety and health of the Airmen and Guardians who work and live on our installations, their families, and the surrounding communities are among our highest priorities. We greatly appreciate congressional support for our efforts to address per- and polyfluoroalkyl substances (PFAS) and facilitate Environmental Restoration Program progress.

Environmental Restoration

We remain focused on meeting our cleanup obligations under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA). Investigation objectives and environmental response actions performed under these statutes aim to reduce risk to human health and the environment in a risk-based, prioritized manner at the approximately 13,000 restoration sites at our active and closed installations. Currently, much of our restoration program focus is on chemicals of emerging concern, most notably, PFAS.

Our PFAS strategy uses CERCLA to investigate, define, and, as necessary, remediate groundwater, surface water, sediment, and soil impacted by DAF activities. We also conduct a robust effort to communicate and collaborate with local communities, State and Federal agencies, and elected officials at all levels. The DAF PFAS response framework is built on three themes: (1) protect human health; (2) prevent future releases; and (3) promote meaningful communication and collaboration with communities.

The primary source of PFAS compounds from DAF activities is aqueous film forming foam (AFFF). The two main PFAS compounds in AFFF are perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). While AFFF is the primary source of DAF-related PFAS impacts, there are other minor DAF sources such as electroplating and photofinishing. We are committed to addressing all of these sources under federal CERCLA cleanup law and meet the requirements in Sec 341 of the 2022 NDAA and Sec 346 of the 2023 NDAA.

We remain committed to align our PFAS research and remediation efforts with the scientific progress and state and federal regulatory frameworks. Scientific progress and the state

and federal regulatory framework surrounding PFAS are rapidly evolving as we investigate and remediate PFAS impacts, and these developments can increase our scope and extend our implementation schedules. For example, in June 2022, the U.S. Environmental Protection Agency (EPA) published more stringent Regional Screening Levels (RSLs) that we now use to delineate or define the extent of PFAS impacts during CERCLA investigations. This required the DAF to review sites to determine if additional work is necessary. This work is ongoing and could result in the need for additional sampling, thereby affecting the project schedule. In addition, several states have promulgated drinking water standards and the EPA is committed to establishing a national primary drinking water regulation for certain PFAS.

We look forward to the clarity that national drinking water regulation will provide. In the interim, DoD is continuing to use exceedances of 70 parts per trillion (ppt) to trigger the provision of alternate drinking water under our CERCLA removal authority until EPA establishes a nationwide, enforceable drinking water standard. Pursuant to DoD policy, once initiation of a CERCLA Removal Action is triggered, we may use a more stringent promulgated state drinking water standard for PFAS cleanup instead of 70 ppt.

In anticipation of this EPA drinking water regulation and to account for emerging science that shows potential health effects of PFOS and PFOA at levels lower than 70 ppt, we, in coordination with DoD, are evaluating our efforts to address PFAS in drinking water at DAF sites, and what actions we can take to be prepared to incorporate this standard, such as reviewing our current data and additional sampling where necessary. We remain committed to fulfilling our cleanup responsibilities, operating within the law and authorities provided by federal cleanup laws, and clearly communicating and engaging with communities.

In prioritizing CERCLA environmental response actions, we use a risk-based decision-making framework with protection of human health and the environment as the highest priority. Action is prioritized on a “worst first” basis, meaning sites that pose a greater potential risk to human health and the environment are addressed before sites posing a lesser risk. Although the Department does not program environmental restoration funds by chemical, we obligated \$1.34 billion to identify, investigate, and respond to PFAS releases. Drinking water response actions are complete at nine Base Realignment and Closure (BRAC) installations and 39 DAF Active, Reserve and Air National Guard (ANG) installations. Implemented response actions include

supplying bottled water, installing point-of-use filtration, whole-house filtration, and connecting residents to municipal water supplies.

The FY23 appropriations provided \$216.4 million above the budget request, of which \$68 million is allotted to address PFAS at BRAC installations. As of December 2022, we completed initial PFAS CERCLA Site Inspections at 149 installations and initiated CERCLA Remedial Investigations for 111 DAF installations, 14 of which are BRAC installations. While we take prompt actions under CERCLA to address drinking water impacts, the remaining response efforts are primarily intended to address PFAS in groundwater and soil, which can be technically complex and lengthy to complete.

The evolving regulatory environment and complex nature of the challenges posed by PFAS remediation require the use of a collaborative and cohesive team effort. In 2019, the DoD PFAS Task Force was developed to meet this need, and we are an active member. This PFAS Task Force is focused on addressing and eliminating the use of AFFF as currently formulated, understanding the impacts of PFAS on human health, and ensuring we fulfill our cleanup responsibilities related to PFAS. We are working with the PFAS Task Force Working Group to develop and implement the NDAA data reporting requirements.

We proactively engage with community members who are concerned about the possible environmental and health effects from PFAS impacts resulting from DAF activities to support our Restoration Advisory Boards (RABs) as we constantly strive to improve our community outreach programs to be more inclusive and responsive. By using Technical Assistance for Public Participation (TAPP) grants, we can provide communities with independent technical assistance to improve their understanding of highly technical cleanup information and provide advice to decision makers. This year, we supported the Barnes Air National Guard Base community in Westfield, MA through TAPP grant assistance for their RAB.

We are also working with community members at several bases to seek their input on distribution of RAB community interest surveys. We are looking beyond federal regulatory public outreach programs to identify other means to expand community engagement. For example, we held a treatment plant tour and technical workshop at the former Wurtsmith Air Force Base in October 2022 to further the community's technical understanding of our cleanup processes and progress. We are also participating with EPA in an environmental justice pilot at Dover AFB.

Environmental Quality

We ensure resilient natural infrastructure and maintain sound environmental stewardship by implementing compliance programs which adhere with applicable environmental laws and regulations. Our environmental compliance programs focus on multiple environmental media and encompass efforts to identify and minimize or eliminate environmental impacts from DAF activities. Specific efforts to ensure compliance include detailed air quality assessments, management and inspection of underground and above ground storage tanks, hazardous and solid waste management and disposal, and environmental planning and permitting procedures. Additionally, we operate a forward leaning pollution prevention program that includes maximizing the diversion of solid waste from landfills to reduce the volume and cost of solid waste disposal. We recycle batteries, used oil, fluorescent light bulbs, and spent solvents; and support our hazardous materials pharmacies to effectively reduce, track for reporting, and safely manage the use of hazardous materials. Through these compliance programs, we continue to protect the health of our Airmen, Guardians, and the environment by making investments to meet regulatory requirements and promote efforts to prevent non-compliance through pollution prevention programs and routine inspections.

We remain firmly committed to a robust program of integrated conservation management covering a full suite of environmental, natural, and cultural resources. Conservation funding has allowed us to invest in natural and cultural activities on and around our installations and training ranges that provide direct support to mission readiness. The conservation program in FY23 supports ongoing habitat and species management for 123 threatened and endangered species found across 54 DAF installations and provides for continued cooperation and collaboration with the other military Services, federal government agencies such as the United States Fish and Wildlife Service, and applicable State fish and game agencies. The DAF Cultural Resources Program supports mission needs through maintaining our Integrated Cultural Resources Management Plans. These 117 plans work to preserve 6,141 historic buildings and structures and 20,669 archaeological sites.

We also executed a National Historic Preservation Act Programmatic Agreement for decommissioning the Minuteman III intercontinental ballistic missile weapon system and replacing it with the Sentinel program. This Programmatic Agreement will serve as a roadmap on how historic properties will be identified, how adverse effects to those properties will be

resolved, and the way consultation will occur over the course of the program. Parties to the agreement include seven State Historic Preservation Offices, one Tribal Historic Preservation Office, the National Park Services, the Advisory Council on Historic Preservation, 57 Tribal governments, nine other Federal agencies, 11 state agencies and local governments, and five historical resource focused non-governmental organizations.

Recent efforts carried out at Eglin AFB, FL exemplify integrated conservation management. Archaeologists at Eglin teamed with biologists and conservationists from the Choctawhatchee Basin Alliance to construct a series of “Living Shorelines” to protect sensitive archaeological sites from shoreline erosion while also enhancing natural habitat and water quality. Partnerships like these help us preserve cultural resources and provide effective ecosystem and habitat management, including wildland fire and invasive species management. These partnerships also support ongoing natural resource management efforts that focus on addressing imperiled and invasive species, critical habitats, and other key natural resources on installations to avoid or minimize mission impacts. Through the DoD Recovery and Sustainment Partnership, we collaborated with the United States Fish and Wildlife Service to enhance mission operations and increased range access while protecting at-risk species. This successfully resulted in the proposed down-listing of the red-cockaded woodpecker from Endangered to Threatened status and the delisting of the Okaloosa Darter.

We remain committed to responsible environmental stewardship. As trustee for more than 8.3 million acres of land including forests, prairies, deserts, wetlands, and coastal habitats, we understand the important role natural resources play in maintaining our mission capability. To maintain military readiness, we need realistic test and training environments, which themselves are ecosystems. Quite simply, if we do not maintain the ecosystems we rely upon to continue our test and training mission, and clean up the impacts of past mission activities, we will not be able to achieve or maintain military readiness.

Base Realignment and Closure (BRAC)

The FY23 appropriation for BRAC cleanup is \$175 million, including an additional \$68 million Congressional add-ons to address PFAS. We greatly appreciate congressional support for our PFAS efforts as we continue the cleanup and transfer of BRAC properties. This funding will facilitate environmental restoration and property transfer activities at 34 former DAF

installations closed through prior BRAC law and keep us on-track to transfer the remaining 1,651 acres at five former installations by 2027.

Conclusion

Our FY23 budget balanced risk between maintaining current readiness in support of combatant commanders today, while investing in the force infrastructure we need for the future. The seven operational imperatives served as our “north star” in guiding this transformation and continue to serve as our guide in the FY24 budget submission. We remain committed to ensuring resilient, optimized installations and operational energy for effective mission execution to deliver the foundational capabilities resident in a changing operating environment. While we remain extremely capable, we cannot deliver these capabilities alone. We must operate as One Team—within our Department, across the Joint Force and interagency, and in lockstep with our allies and partners. Only through true partnership can we successfully compete, deter, and if necessary, win our One Fight against a very capable peer adversary in China and the acute threat that is Russia. With congressional support, I am confident we can preserve the platforms necessary to enable and project combat power in Air and Space; deliver right-sized and sustainable built and natural infrastructure; and provide energy resilience and increased “lethality per gallon.”

Thank you for the opportunity to discuss our programs supporting energy, installations, and environment. We appreciate Congress’ continued support for our enterprise and look forward to working with you.

Edwin H. Oshiba

Edwin H. Oshiba, a member of the Senior Executive Service, is the Acting Assistant Secretary of the Air Force for Energy, Installations, and Environment, Department of the Air Force, the Pentagon, Arlington, Virginia. Mr. Oshiba is responsible for the formulation, review and execution of plans, policies, programs and budgets to meet Air Force installations, energy, environment, safety and occupational health objectives.

Mr. Oshiba was commissioned in the Air Force in 1989 upon graduation from Santa Clara University. He commanded three civil engineer squadrons and an expeditionary Prime Base Engineer Emergency Force, or Prime BEEF, group and served in a variety of positions at garrison, major command and Headquarters U.S. Air Force levels. He retired in 2015 at the rank of colonel and has since served as the Deputy Director of Civil Engineers, Deputy Chief of Staff for Logistics, Engineering and Force Protection, Headquarters U.S. Air Force, Arlington, Virginia, and Director, Air Force Civil Engineer Center, San Antonio, Texas. In his latest position as Director of Resource Integration, Deputy Chief of Staff of Logistics, Engineering and Force Protection, Headquarters U.S. Air Force, he was responsible for the planning, programming and budgeting of weapons systems sustainment, equipment, and logistics and installations resource requirements. In this role, Mr. Oshiba monitored performance of operations and maintenance, working capital funds and investment programs, participated in program and financial review groups and advocated for financial adjustments to optimize force readiness. He also oversaw preparation and defense of these Air Force programs for the Office of the Secretary of Defense, Office of Management and Budget and Congress.

EDUCATION

1988 Bachelor of Science, Electrical Engineering, Santa Clara University, Calif.
 1996 Squadron Officer School, Maxwell Air Force Base, Ala.
 1997 Distinguished Graduate, Master of Science, Engineering and Environmental Management, Air Force Institute of Technology, Wright-Patterson AFB, Ohio
 2003 Master of Military Operational Art and Science, Air Command and Staff College, Maxwell AFB, Ala.
 2008 Air War College, Maxwell AFB, Ala., by correspondence
 2010 Master of Science, National Security Strategy, National War College, Fort Leslie J. McNair, Washington, D.C.
 2019 Vanguard Senior Executive Development Program
 2020 Advanced Senior Leader Development Seminar

CAREER CHRONOLOGY

February 1989–July 1992, Chief of Readiness, Electrical Design and Utilities Engineer, 96th Civil Engineering Squadron, Dyess Air Force Base, Texas (deployed as Operations Officer, Riyadh Air Base, Kingdom of Saudi Arabia)
 July 1992–July 1994, Engineering Flight Commander and Chief, Contract Management, 8th Civil Engineer Squadron, Kunsan Air Base, South Korea
 August 1994–May 1996, Executive Officer to The Command Civil Engineer, and Unaccompanied Housing Manager, Headquarters Air Force Space Command, Peterson AFB, Colo.
 May 1996–December 1997, Student, Graduate Engineering and Environmental Management, Air Force Institute of Technology, Wright-Patterson AFB, Ohio
 December 1997–June 2000, Chief, Maintenance Engineering, and General Officer Quarters Manager, 1st Civil Engineer Squadron, Langley AFB, Va. (deployed as Base Civil Engineer, Doha AB, Qatar)
 June 2000–July 2002, Operations Flight Commander, 2nd Civil Engineer Squadron, Barksdale AFB, La. (deployed as Civil Engineer Commander, 355th Air Expeditionary Group, and Base Civil Engineer, Masirah Island AB, Sultanate of Oman)
 August 2002–June 2003, Student, Air Command and Staff College, Maxwell AFB, Ala.
 June 2003–June 2005, Bases and Units Program Manager, and Base Realignment and Closure 2005

Analysis Team Chief, Office of The Civil Engineer, Deputy Chief of Staff for Installations and Logistics, Headquarters U.S. Air Force, Arlington, Va.
 July 2005–May 2006, Commander, 347th Civil Engineer Squadron, and Base Civil Engineer, Moody AFB, Ga.
 May 2006–September 2006, Commander, 376th Expeditionary Civil Engineer Squadron, and Base Civil Engineer, Manas AB, Kyrgyz Republic
 September 2006–July 2007, Commander, 23rd Civil Engineer Squadron, and Base Civil Engineer, Moody AFB, Ga.
 July 2007–July 2009, Commander, 375th Civil Engineer Squadron, and Base Civil Engineer, Scott AFB, Ill.
 August 2009–July 2010, Student, National War College, Fort Leslie J. McNair, Washington, D.C.
 August 2010–August 2011, Commander, 577th Expeditionary Prime BEEF Group, Bagram Airfield, Afghanistan
 September 2011–March 2013, Installation Support Panel Chair, Deputy Chief of Staff, Strategic Plans and Programs, and Chief, Installation Support and Strategy Branch, Office of the Air Force Civil Engineer, Deputy Chief of Staff for Logistics, Installations and Mission Support, Headquarters U.S. Air Force, Arlington, Va.
 April 2013–September 2014, Chief, Installation Strategic Plans and Programs Division, Office of the Air Force Civil Engineer, Deputy Chief of Staff for Logistics, Installations and Mission Support, HAF, Arlington, Va.
 October 2014–February 2015, Chief, Installation Strategy and Plans Division, Directorate of Civil Engineers, Deputy Chief of Staff for Logistics, Engineering and Force Protection, HAF, Arlington, Va.
 February 2015–January 2018, Deputy Director of Civil Engineers, Directorate of Civil Engineers, Deputy Chief of Staff for Logistics, Engineering and Force Protection, HAF, Arlington, Va.
 February 2018–November 2018, Director, Air Force Civil Engineer Center, Air Force Installation and Mission Support Center, Air Force Materiel Command, Joint Base San Antonio-Lackland, Texas
 November 2018–January 2022, Director of Resource Integration, Deputy Chief of Staff of Logistics, Engineering and Force Protection, HAF, Arlington, Va.
 February 2022–present, Acting Assistant Secretary of the Air Force for Energy, Installations, and Environment, the Pentagon, Arlington, Va.

AWARDS AND HONORS

Presidential Rank Award (Meritorious)
 Legion of Merit
 Bronze Star Medal with oak leaf cluster
 Meritorious Service Medal with silver oak leaf cluster
 Air Force Commendation Medal with oak leaf cluster
 Navy and Marine Corps Commendation Medal

PROFESSIONAL MEMBERSHIPS AND ASSOCIATIONS

Society of American Military Engineers

(Current as of February 2022)

**WITNESS RESPONSES TO QUESTIONS ASKED DURING
THE HEARING**

FEBRUARY 28, 2023

RESPONSE TO QUESTION SUBMITTED BY MR. WALTZ

Mr. OWENS. Ensuring the energy resilience of installations in Europe, in part by eliminating reliance on Russian energy, remains a priority for the Department. Building upon our previous work to understand our reliance in Russian energy at our main operating bases in the region, we have taken strategic next steps to further address any gaps our resilience posture. First, we are conducting an analysis of the main operating bases in Europe, their criticality, and their dependence on Russian energy. Second, we continue to ensure that the Military Departments complete Installation Energy Plans (IEPs) for main operating bases and other installations in Europe, with 13 plans completed thus far. Once complete, we will share the results of the previously mentioned study with the Military Departments to update existing IEPs as appropriate, and to guide development of future IEPs as required by the NDAA. Lastly, my Office has scheduled separate, focused briefings with each of the Military Departments and the Office of the Joint Chiefs of Staff on their energy resilience postures in Europe to better enable implementation of resilience in the region, with a goal of eliminating reliance on Russian energy. [See page 12.]

RESPONSE TO QUESTION SUBMITTED BY MR. GARAMENDI

Ms. BERGER. I look forward to providing your office a detailed briefing on this topic. To summarize the situation in this setting, the Navy temporarily suspended submarine docking in Dry Docks (DD) 4, 5, and 6 at Puget Sound Naval Shipyard & Intermediate Maintenance Facility (PSNS & IMF) and the dry dock at delta pier located at Trident Refit Facility (TRF) Bangor due to the results of a recent seismic vulnerability study and expert analysis in late January 2023. On February 15, 2023, the Navy mobilized construction to mitigate seismic vulnerabilities at TRF-Bangor and PSNS DD 4 & 5 to restore availability for submarine use. There are no immediate plans to mitigate at DD6, which can still safely support aircraft carrier dockings. The estimated completion dates for DD 4 and TRF is mid-April, with work at DD 5 to follow. [See page 16.]

RESPONSES TO QUESTIONS SUBMITTED BY MR. SCOTT

Mr. OSHIBA. The DAF is incorporating lower emission concrete into the Patrick Space Force Base (SFB) Consolidated Communications Center as part of the pilot program. We first identified the project best suited for this pilot project then determined the right sustainable material to incorporate. This project met the pilot project criteria in Section 2861 of the Fiscal Year 2022 NDAA. Patrick SFB is vulnerable to extreme weather events based on our assessment with the Defense Climate Assessment Tool and we could prepare the project for execution quickly while incorporating sustainable materials.

The structure of the Consolidated Communications Center primarily consists of concrete for the foundation, floors, columns and roof, and walls. Our approach to incorporate sustainable materials was to modify the concrete specification with a target to reduce emissions associated with concrete by 30–40% compared with conventional concrete baselines. Modification of the concrete specification during the design was not expected to significantly impact the design or contract execution timeline, cost, or resiliency of the facility. [See page 19.]

Mr. OSHIBA. Incorporating cross laminated timber as a primary construction material when it was not included from the beginning of the design would have significantly impacted the project timeline and cost. Re-design would have been required. This project was already between 35% and 65% design when selected. We focused on more sustainable concrete because modification of the concrete specification would not have an adverse impact on timeline, enabling us to meet the intent of the pilot program to execute the project as quickly as possible. The DAF is looking to incorporate cross-laminated timber into future MILCON projects where design has not yet begun. [See page 20.]

RESPONSE TO QUESTION SUBMITTED BY MS. SHERRILL

Ms. BERGER. Each installation has unique opportunities and challenges regarding its energy and water needs, and the Department of the Navy is developing a guidebook for installation commanding officers to understand the tools, authorities and resources available to them. MCLB Albany's success can be attributed to innovative and diverse financing mechanisms, partnerships, and long-term commitment. First, MCLB successfully leveraged energy financing mechanisms and multiple funding sources to achieve net zero electricity outcomes and expand resilience capabilities with limited appropriations. Second, MCLB Albany partnered with local entities to make use of other resources normally unavailable to military installations and create business case opportunities for net zero electricity achievement. Third, MCLB Albany demonstrated that achievement of net zero requires commitment over many years to plan, design, and implement multiple projects and initiatives. The installation committed to pursuing net zero over 15 years ago, including development of a net zero plan in 2011. The net zero vision was embraced by commanding officer after commanding officer, providing continuity of commitment from leadership levels. MCLB Albany's energy team provided the dedication, stability, consistency, and passion required to advance net zero. [See page 19.]

RESPONSE TO QUESTION SUBMITTED BY MR. MOYLAN

Ms. BERGER. The Navy remains committed to maintaining a robust pier-side ship repair capability on Guam, including funding infrastructure repairs to Lima, Mike, and November Wharves in Guam to support additional maintenance capability. Plans for future projects include repairs to Glass Breakwater; Oscar, Papa, and Quebec wharves; dredging to support Roll On Roll Off (RORO) operations at Lima wharf, additional energy resilience, construction of a new pier on Polaris Point to support Virginia Class Block V submarines, and improvement to Kilo and Lima wharves. Currently, forward-based submarine tenders EMORY S LAND (AS 39) and FRANK CABLE (AS 40) provide repair, supply, weapons handling, and tending for submarines homeported and visiting Guam. The Navy added 154 Full Time Equivalents in FY24 to support the Pearl Harbor Naval Shipyard & Intermediate Maintenance Facility-Guam Detachment. [See page 28.]

RESPONSE TO QUESTION SUBMITTED BY MR. VASQUEZ

Ms. JACOBSON. There is currently an ongoing FY20 ERCIP project for Installing a Microgrid, Solar Array and Battery Storage under construction. The groundbreaking ceremony was held 27 January 2023 and the project is expected to be complete and operational within 24 months.

Additionally, all installations are currently developing their five-year plans for future ERCIP projects, which we expect will include additional projects for White Sands Missile Range. [See page 28.]

RESPONSE TO QUESTION SUBMITTED BY MR. DAVIS

Ms. BERGER. The Department of the Navy (DON) continues to monitor and adapt to emerging regulatory requirements and evolving scientific understandings of PFAS while working closely with regulators and the community. Our response actions and schedules are developed in consultation with—and approval by—regulatory agencies, and with public input. The DON took early actions to ensure that Navy and Marine Corps installations and facilities have drinking water without perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) above the U.S. Environmental Protection Agency (EPA)'s then health advisory levels of 70 part per trillion and proactively identified locations where PFAS may have migrated to off-installation drinking water sources. Near MCB Camp Lejeune, the DON has sampled 12 private drinking water wells downgradient from the installation for PFAS, and all sampling results were below 70 parts per trillion for PFOS and/or PFOA. The DON supports EPA's recent actions to propose a regulatory drinking water standard for PFAS that, once finalized, will apply to all drinking water suppliers, including DON. The DON will continue to amend sampling and testing of PFAS as appropriate, in the event additional drinking water regulations (such as EPA's proposed rule) are promulgated. On base, the DON's deliberate response at MCB Camp Lejeune has been to complete the Preliminary Assessment and Site Inspection for all areas of interest on the installation in accordance with Comprehensive Environmental Re-

sponse, Compensation and Liability Act. The Preliminary Assessment was completed in December 2019 and the Site Inspection was completed in January 2022. Both documents can be found on-line at <https://administrative-records.navfac.navy.mil/?PK7PTGQ656246GPKLO>. The Site Inspection evaluated 59 areas of interest (AOIs) and recommended that 51 of the AOIs should advance to the next step, which is Remedial Investigation/Feasibility Study. One AOI is being further evaluated. All RI/FSs for MCB Camp Lejeune were originally planned to complete by 2029. However, the DON has identified additional new sites as a result of the EPA's lower Regional Screening Levels, and this additional work shifts the completion date to 2034. Remedial Investigations/Feasibility Studies will be developed and completed for individual sites or groupings of sites with the highest risk sites generally being addressed first. [See page 22.]

QUESTIONS SUBMITTED BY MEMBERS POST HEARING

FEBRUARY 28, 2023

QUESTIONS SUBMITTED BY MR. WALTZ

Mr. WALTZ. Located in the center of the Indian Ocean, Naval Support Facility Diego Garcia serves as a facility for U.S. military aircraft and ships transiting from the Philippines to the Middle East and gives our strategic bombers and ISR assets the capability to reach CENTOM and maritime chokepoints and Chinese installations in the region. The U.K. owns this installation and leases portions of it to U.S. forces.

There are ongoing negotiations between the U.K. and Mauritius over the return of control the island chain Diego Garcia is located in to Mauritius. After the abandonment of Bagram Air Base in Afghanistan, OSD assured that this capability loss could be mitigated by assets operating with similar effect from Diego Garcia. What is DOD doing to ensure the U.S. military retains access to this critical installation?

Mr. OWENS. The United States recognizes United Kingdom (UK) sovereignty over the British Indian Ocean Territory (BIOT) and regards the sovereignty dispute as a bilateral matter between the UK and Mauritius. We support UK-Mauritius engagement to resolve the issue.

As you note, the joint U.S.-UK military facility on the island of Diego Garcia plays a vital role in the security of the United States and the Indo-Pacific region. The specific arrangement and agreement with the UK involving the facilities on Diego Garcia is grounded in the uniquely close and active defense and security partnership between the United States and the UK. We are working closely with the UK on this issue and are confident that the UK is aware of U.S. priorities and the importance of continued access to Diego Garcia. We trust that the UK will accurately represent those priorities in its bilateral talks with Mauritius on BIOT.

Mr. WALTZ. According to DOD's own reporting, many facilities on military installations are in poor or failing condition. With more than half a million facilities worldwide and a growing deferred maintenance backlog of at least \$130 billion for all facilities, this is a particularly acute problem with our Shipyards, as highlighted by the recent operational impacts at Puget Sound Naval Shipyard. In order to appropriately posture for global threats, naval fleet maintenance must improve. In order to do so, we must have functioning Shipyards. What is the current status of the dry docks at Puget? And how will the Shipyard Infrastructure Optimization Program (SIOP) get after lagging fleet readiness?

Mr. OWENS. Due to the results of a seismic vulnerability assessment, I understand the Navy suspended submarine docking earlier this year in some of their dry docks at Naval Base Kitsap to ensure safe conditions for submarine operations. We support the Navy in their efforts to implement mitigations to address these seismic vulnerabilities.

The Navy's Shipyard Infrastructure Optimization Program (SIOP) is focused on enabling increased submarine and carrier maintenance throughput by recapitalizing the shipyard infrastructure and equipment required to conduct scheduled depot maintenance, as well as reconfiguring infrastructure layouts to deliver reductions in availability durations. My office continues to work with the Navy to ensure infrastructure is appropriately addressed.

Mr. WALTZ. Many military and civilian personnel have been working remotely for almost three years because of COVID-19 restrictions. What opportunities are available for the military departments and fourth estate to reduce installation infrastructure and leased space, particularly within the national capital region, when assessing their post-pandemic work needs? How do you monitor occupancy rates to ensure proper space usage?

Mr. OWENS. The Military Departments have processes in place to continuously review and adjust facilities to ensure optimization of available space. For example, Department of the Air Force policies that require net-zero growth in facilities square footage are driving space use optimization by requiring installation and combatant commanders to identify facilities that will be demolished or put into closed status to offset any new construction.

With regard to the National Capitol Region, Washington Headquarters Service (WHS) is on a 5-year effort to assist the Office of the Secretary of Defense, Military Departments and Defense Agency and Field Activity realign space within the Na-

tional Capital Region (NCR). The purpose is to analyze Pentagon, Mark Center, and leased space in the NCR and identify opportunities for reducing DOD lease facilities, apply lessons learned from COVID-19 telework experiences, better optimizing underutilized space, eliminate vacant space, and where possible, establishing shared hoteling workspaces to better utilize office space. As part of this analysis, WHS continues to closely monitor and review facility entry data to identify space opportunities taking into account organizational health and performance impacts, including any customer-facing missions.

Mr. WALTZ. According to DOD's own reporting, many facilities on military installations are in poor or failing condition. With more than half a million facilities worldwide and a growing deferred maintenance backlog of at least \$130 billion for all facilities, this is a particularly acute problem with our Shipyards, as highlighted by the recent operational impacts at Puget Sound Naval Shipyard. In order to appropriately posture for global threats, naval fleet maintenance must improve. In order to do so, we must have functioning Shipyards. What is the current status of the dry docks at Puget? And how will the Shipyard Infrastructure Optimization Program (SIOP) get after lagging fleet readiness?

Ms. BERGER. The Navy temporarily suspended submarine docking in Dry Docks (DD) 4, 5, and 6 at Puget Sound Naval Shipyard & Intermediate Maintenance Facility (PSNS & IMF) and the dry dock at delta pier located at Trident Refit Facility (TRF) Bangor due to the results of a recent seismic vulnerability study and expert analysis in late January 2023. On February 15, 2023, the Navy mobilized construction to mitigate seismic vulnerabilities at TRF-Bangor and PSNS DD 4 & 5 to restore availability for submarine use. There are no immediate plans to mitigate at DD6, since the current restrictions in place are specifically applicable to submarine use and DD6 can still safely support aircraft carrier dockings. The results from the ongoing seismic risk study, due to complete in June 2023, may drive the need for further mitigations. The estimated completion dates for DD 4 and TRF is mid-April, with work at DD 5 to follow. To apply lessons learned at Puget Sound, the Navy accelerated a rapid assessment at Pearl Harbor Naval Shipyard to identify and evaluate potential seismic vulnerabilities.

The Shipyard Infrastructure Optimization Program (SIOP) is focused on enabling increased submarine and carrier maintenance throughput by recapitalizing the shipyard infrastructure and equipment required to conduct scheduled depot maintenance, as well as reconfiguring infrastructure layouts to deliver reductions in availability durations. The Navy completed its first increment of SIOP industrial modeling and simulation in 2022, and this modeling indicates that infrastructure improvement and reconfiguration will—in addition to improving shipyard condition—result in tangible reductions in ship maintenance durations. The extent of reductions in maintenance durations are dependent on ongoing analyses of alternatives at each shipyard. These modeled reductions are dependent upon the ship class being maintained and assume investments that provide for the full range of facility optimization.

Mr. WALTZ. Many military and civilian personnel have been working remotely for almost three years because of COVID-19 restrictions. What opportunities are available for the military departments and fourth estate to reduce installation infrastructure and leased space, particularly within the national capital region, when assessing their post-pandemic work needs? How do you monitor occupancy rates to ensure proper space usage?

Ms. BERGER. The Department of the Navy continuously assesses the utilization of our infrastructure for efficiency and effectiveness. The Navy and Marine Corps have reduced facility footprint through the facility demolition and by reducing leased facilities where possible consistent with mission needs. These efforts support a more distributed workforce and enable the Department to better use our existing space and make the most of facility investments taking into account organizational health and performance impacts, including any customer-facing missions.

Specifically in response to a changed, post-pandemic workforce, the Navy is conducting pilot at the Washington Navy Yard to undertake consolidation efforts at Commander, Navy Installations Command (CNIC) Headquarters. This effort is still in progress, and we expect to award a contract to physically renovate spaces late this calendar year. Information gained from this pilot consolidation project will be used to determine the cost and effort required to do this at scale, and potential space and cost savings that could be realized by expanding this effort.

Mr. WALTZ. According to DOD's own reporting, many facilities on military installations are in poor or failing condition. With more than half a million facilities worldwide and a growing deferred maintenance backlog of at least \$130 billion for all facilities, this is a particularly acute problem with our Shipyards, as highlighted by the recent operational impacts at Puget Sound Naval Shipyard. In order to ap-

propriately posture for global threats, naval fleet maintenance must improve. In order to do so, we must have functioning Shipyards. What is the current status of the dry docks at Puget? And how will the Shipyard Infrastructure Optimization Program (SIOP) get after lagging fleet readiness?

Ms. JACOBSON. [No answer was available at the time of printing.]

Mr. WALTZ. Many military and civilian personnel have been working remotely for almost three years because of COVID-19 restrictions. What opportunities are available for the military departments and fourth estate to reduce installation infrastructure and leased space, particularly within the national capital region, when assessing their post-pandemic work needs? How do you monitor occupancy rates to ensure proper space usage?

Ms. JACOBSON. There is currently an ongoing FY20 ERCIP project for Installing a Microgrid, Solar Array and Battery Storage under construction. The groundbreaking ceremony was held 27 January 2023 and the project is expected to be complete and operational within 24 months. Additionally, all installations are currently developing their five-year plans for future ERCIP projects, which we expect will include additional projects for White Sands Missile Range.

Mr. WALTZ. According to DOD's own reporting, many facilities on military installations are in poor or failing condition. With more than half a million facilities worldwide and a growing deferred maintenance backlog of at least \$130 billion for all facilities, this is a particularly acute problem with our Shipyards, as highlighted by the recent operational impacts at Puget Sound Naval Shipyard. In order to appropriately posture for global threats, naval fleet maintenance must improve. In order to do so, we must have functioning Shipyards. What is the current status of the dry docks at Puget? And how will the Shipyard Infrastructure Optimization Program (SIOP) get after lagging fleet readiness?

Mr. OSHIBA. [No answer was available at the time of printing.]

Mr. WALTZ. Many military and civilian personnel have been working remotely for almost three years because of COVID-19 restrictions. What opportunities are available for the military departments and fourth estate to reduce installation infrastructure and leased space, particularly within the national capital region, when assessing their post-pandemic work needs? How do you monitor occupancy rates to ensure proper space usage?

Mr. OSHIBA. Lease space assignments within the national capital region are managed and overseen by the Washington Headquarters Service. The Department of the Air Force manages assigned national capital region space using Pentagon space standards and conducts space utilization surveys to identify footprint reduction or consolidation opportunities.

The Department of the Air Force does not mandate the use of telework or remote work authorizations; each organization identifies the percentage of personnel authorized and willing to telework or remote work in addition to the space-type requirements (administrative, SCIF, etc). We continue to review all policies authorizing teleworking or alternative work agreements and consider these policies in the review of real estate acquisitions and lease requests/renewals to ensure all requests are appropriately sized for the mission purpose.

In the November 2020 DOD Report on Infrastructure Capability, the Department of the Air Force reported significant surplus infrastructure capacity for all operations and training facility categories assessed, and we continue to assess solutions within existing authorities to consolidate and reduce our excess infrastructure. Utilization of operations and training facility categories is unlikely to be impacted by telework and remote work opportunities. Outside the national capital region, the Department of the Air Force is working to establish an Enterprise Utilization Initiative (ECD FY25) to conduct space utilization on an annual basis with accurate space utilization data and utilization rates populated and available in official databases. The Department of the Air Force will continue to evaluate where telework and remote work will help reduce installation infrastructure and leased space, consistent with unique mission requirements of each organization.

Mr. WALTZ. With respect to the effects of Hurricane Michael at Tyndall Air Force Base, what is the current status of rebuilding efforts? What are the lessons learned with respect to installation resiliency; what procedures should be sustained or improved?

Mr. OSHIBA. The rebuild of Tyndall AFB is progressing well. 89% (33 of 37) of the projects have been awarded with an additional two expected to be awarded in 2023. An additional \$252M is required to award the final two projects and is included on the FY24 Air Force Unfunded Priority List. Construction is nearly complete on the first MILCON awarded after the storm, the Child Development Center. We expect eight more facilities to finish construction in 2023 and the majority to reach completion by the end of 2026.

One lesson we learned is that newer facilities, built to more current building codes survived the storm well. We have applied that to the rebuild by implementing new construction standards, specifically: the minimum design wind speed is 165 mph, and 170 mph for mission critical facilities; all exterior materials (glass, roofing, siding, etc) must be manufactured and installed according to building codes for the Miami-Dade County hurricane zone; and we established design elevations that take into account projected sea level rise scenarios through the year 2100. Furthermore, DAF is studying nature based coastal resiliency strategies such as shoreline stabilization using oyster reefs and dune restoration, and have used digital technology to test our designs under adverse conditions.

QUESTIONS SUBMITTED BY MR. SCOTT

Mr. SCOTT. Is the MILCON planning process prepared for large-scale combat operations against an enemy peer nation? If not, why not and what changes should be made to the planning process?

Mr. OWENS. Yes, the planning process for construction is grounded in the identification of mission requirements and capabilities and developing construction related and non-construction alternatives that can meet those needs. When construction is deemed the appropriate solution, skilled facility planners will need to have access agreements with friendly nations and site information to develop project scopes. Improvements can always be made and OSD will continue to work with Military Departments to identify and implement efficiencies.

Mr. SCOTT. Do you support or oppose legislation that would raise the cap on minor military construction above the temporary cap of \$9 million? If you support raising the cap, what is your recommended amount?

Mr. OWENS. The Department would like to see this temporary increase made permanent, with the ability to increase the project cost threshold worldwide based upon the area construction cost index for each location. The Department appreciates Congress's temporary increase in the minor military construction threshold as our buying power for construction continues to diminish. Currently, the ACF can only be applied to a limited set of locations including the United States. This application worldwide would normalize the Department's buying power by accounting for geographic economic differences.

Mr. SCOTT. Do you support or oppose legislation that would make permanent the authorization of depot working capital funds for unspecified minor military construction projects? As you know, the FY 23 NDAA temporarily extended this program from September 30, 2023 to September 30, 2025.

Mr. OWENS. The Department supports making this legislation permanent, which would eliminate the uncertainty associated with a temporary authority.

Mr. SCOTT. Is legislation required to ensure that the Department of Defense meets the target of 80% of its sustainment needs?

Mr. OWENS. The Department does not believe legislation required. The Department is looking to modify the process for identifying an appropriate level of funding for facilities. Legislation that only addresses one aspect of facility investment limits the Department's ability to holistically develop a facility investment strategy that accounts for all aspects of facility maintenance and repair and could stifle innovation in this area.

Mr. SCOTT. What should be the recapitalization rate of DOD buildings and facilities? How would it compare to private industry standards?

Mr. OWENS. The DOD mission and availability of funding drives the recapitalization rate for our buildings and facilities. Private industry invests in their facilities based on the extent their facilities drive business development, workforce retention, and overall profit margins.

Mr. SCOTT. Have you ever visited JIATF-South Headquarters at NAS Key West, Florida? It is a 1950s era headquarters building in need of replacement. If not, can you make plans to visit the headquarters soon to see it for yourself firsthand? What impact does the fact that it is an Army MILCON for a joint command on a naval installation have when it comes to funding priorities for Army Milcon? How can this be fixed and the Headquarters be made a priority for the nation?

Mr. OWENS. I have not visited JIATF-South Headquarters and will plan a visit. This project is an example of key stakeholders that will need to be effectively engaged to ensure success. The Army is the assigned Service for administrative and logistical support of SOUTHCOM and therefore is responsible for funding this project. Like all other command proponents for Army projects, SOUTHCOM, as a Combatant Command (CCMD), is responsible to ensure the Army is aware of their requirements. If the Army does not include CCMD priority projects in their submis-

sion to OSD, the Department has established processes for the CCMD to engage with OSD to appropriately consider their requirement. Because this project is on a Navy installation, the Navy through Naval Facilities Engineering Systems Command will be responsible for executing the project in coordination with the installation, the Army, and SOUTHCOM.

Mr. SCOTT. What impact does DOD's \$137 billion deferred maintenance backlog have on the ability of the United States to wage large scale combat operations against an enemy peer nation?

Mr. OWENS. Due to the size of the Department's facility inventory, the deferred maintenance backlog has a minimal effect on our ability for combat operations. The Department's focus on mission assurance ensures our facility investments include those that would allow us to perform our mission. However, the Department also recognizes that there may be longer-term challenges without investment in other foundational enablers, including quality-of-life facilities, and is committed to working with Congress on these investments.

Mr. SCOTT. Is the MILCON planning process prepared for large-scale combat operations against an enemy peer nation? If not, why not and what changes should be made to the planning process?

Ms. BERGER. The Department of the Navy appreciates the continual dialog with Congress on the effectiveness and applicability of our authorities. The DON has existing authorities for advanced planning for Military Construction (MILCON) projects as well as "planning and design" for MILCON projects. The planning processes for both of these areas is sufficient, albeit contingent upon the availability of appropriated funding. Once planning and design is complete, the execution of MILCON projects requires both specific authorization and appropriation. Although emergency reprogramming for urgent, new MILCONs is possible, that process may not be sufficient in the event of large-scale combat operations against a peer. Greater flexibility, such as lump sum authority and appropriations with post-execution reporting requirements may be needed.

Mr. SCOTT. How many Navy-certified drydocks in public and private shipyards are there across the United States? How many are needed for large scale combat operations against an enemy peer nation?

Ms. BERGER. There are 72 dry docks in public and private shipyards in the United States and territories that are certified or certifiable by the Naval Sea Systems Command. To understand how many Navy-certified dry docks are needed for large-scale combat operations against an enemy peer nation, the Navy is leveraging the Naval Contested Logistics wargame series with the Naval War College to better understand both the repair and the reconstitution of maritime forces and to provide data in support of wartime requirements development.

Mr. SCOTT. Can the United States Navy win a protracted war without a way to fix ships quickly and send them back to the fight? If not, what is your office doing to find ways to repair damaged ships faster during large scale combat operations against an enemy peer nation?

Ms. BERGER. Ongoing wargames will better refine requirements for locations of both fixed and expeditionary repair assets/facilities. The Navy has built an Analytic Master Plan that drives wargame subjects and other analysis designed to identify what is needed to execute the Navy's mission of decisively fighting and winning. Battle Damage Repair is one part of a broader set of capabilities needed to fight and win, and Naval Contested Logistics efforts look at what is needed to Repair, Rearm, Refuel, Resupply, and Revive. All five efforts are needed to provide warfighting capability to the Combatant Commanders.

Mr. SCOTT. What is the recapitalization rate of U.S. Navy drydocks and how does it compare to private industry? What is the recapitalization rate of U.S. Navy buildings and facilities?

Ms. BERGER. The service life of Navy dry docks is expected to be 150 years, however, due to mission changes, inadequate sustainment, and other factors, restoration and modernization work can be required prior to the end of a dry dock's service life. For example, the Navy recently awarded a task order to replace Dry Dock 3 at Pearl Harbor Naval Shipyard due to changed mission. This dock was constructed in 1942 and is currently 81 years old. The Navy does not have the necessary historical data to calculate an actual recapitalization rate of Navy dry docks, but it is expected to be more frequent than 150 years. The Navy also does not have actual dry dock recapitalization rates for private industry to make comparisons.

For Navy buildings and other facilities, each type of facility has a unique service life when recapitalization would be required to extend its service life. This assumes no change in mission and no restoration work is required over the service life. Across facility types, the Navy uses a 67-year average recapitalization rate, but restoration, modernization or replacement is typically required earlier than a facility's

expected service life due to changing mission and/or restoration due to premature failure or inadequate.

Mr. SCOTT. It has been widely reported that the Air Force is shutting down 10 on-base hotels because of financial problems and I have heard that the Navy's hotels aren't in much better financial shape. The Army has partnered with a private hotel company to run its hotels and they are doing well financially. Are you considering a similar partnership?

Ms. BERGER. The Navy's lodging program is financially strong. Thanks to several business reforms, consolidations and other process improvements over the past several years, the Navy has an aggressive recapitalization program to use non-appropriated funding to not only build new—but also to renovate—our inventory. We remain committed to continuously assessing all pathways to improve our lodging program—including privatization, third-party management and franchising, and all other reforms and approaches—to best support our Sailors, Marines, Civilians and their families.

Mr. SCOTT. Is the MILCON planning process prepared for large-scale combat operations against a enemy peer nation? If not, why not and what changes should be made to the planning process?

Ms. JACOBSON. Yes, our current construction planning process is driven by the need to improve our facilities to be prepared for large-scale combat operations and the imperative to improve or maintain our readiness. The Army planning process for construction is grounded in the identification of mission capability requirements and developing construction and non-construction alternatives that can meet those needs. Combatant Commands have detailed operational plans that identify facility requirements and potential gaps where facilities are deemed inadequate to the task. OSD hosts quarterly updates with each combatant command to review planned and programmed infrastructure requirements that supports operations. An example of this process is the planning for facilities build-out on Guam. This planning includes coordination and collaboration among Navy, Missile Defense Agency, and Army to determine lead agencies for construction requirements to support the mission.

Mr. SCOTT. What is the recapitalization rate of active duty Army buildings and facilities? What is the recapitalization rate of Army Reserve buildings and facilities? What is the recapitalization rate of Army National Guard buildings and facilities?

Ms. JACOBSON. Recapitalization rate can be expressed by number of years to replace existing inventory, which is calculated as current replacement value (Plant Replacement Value) divided by annual facilities investment. Army facilities Investment includes a portion of multiple appropriations including AFH; MILCON (MCA, MCNG, MCAR); O&M (OMA, OMNG, OMAR) and SRM (100% Restoration and Modernization and 20% of Sustainment).¹ The recapitalization rate for the Army's asset inventory are provided by COMPO below using the investment in the FY24 President's Budget Request:

COMPO	FY24
Active	74 years
ARNG	114 years
Reserves	73 years

Mr. SCOTT. Have you ever visited JIATF-South Headquarters at NAS Key West, Florida? It is a 1950s era headquarters building in need of replacement. If not, can you make plans to visit the headquarters soon to see it for yourself firsthand? What impact does the fact that it is an Army MILCON for a joint command on a naval installation have when it comes to funding priorities for Army Milcon? How can this be fixed and the Headquarters be made a priority for the nation?

Ms. JACOBSON. I have not yet had the opportunity to visit the JIATF-South Headquarters, but I understand the need to recapitalize this facility for improved efficiency and resiliency supporting the JIATF-South mission. The fact that the facility is sited on a Naval Base has no impact on its prioritization within the Army program, as the Army routinely constructs projects on Air Force and Navy installations as dictated by mission needs. I would also like to thank you for the \$8M for planning and design funds used to design the facility. The MILCON project, with a current cost of \$378M, will compete with other high priority projects supporting Soldier quality of life, readiness and modernization for scarce MILCON funding. The Army

¹ For Kwajalein SRM expenditures are funded as RDTE.

will work with the Navy to complete the project design and will consider it for funding in future programming and budgeting cycles.

Mr. SCOTT. Is the MILCON planning process prepared for large-scale combat operations against an enemy peer nation? If not, why not and what changes should be made to the planning process?

Mr. OSHIBA. Yes, the MILCON planning process is prepared for large-scale combat operations against near peer and acute threats. The DAF MILCON planning process evaluates operational needs and ensures MILCON projects support the National Defense Strategy objectives. Our corporate structure includes prioritization of Combatant Command (CCMD) requirements through the annual Global Posture Executive Council (GPEC). Approximately one third of our annual MILCON budget supports CCMD priorities. This includes the European Deterrence Initiative (EDI) focused on pre-positioning of material and equipment (runway repair, munitions, deployable air base systems) and the Pacific Deterrence Initiative (PDI) focused on Agile Combat Employment (ACE) concepts to support the distributed hub and spoke model. These projects, along with projects supporting new weapon systems, improve the DAF strategic posture and ensure we are prepared to provide the necessary combat capabilities in any future conflict. Mr. SCOTT. Is the United States Air Force still committed to a Three Depot Strategy?

Mr. OSHIBA. Yes, The Air Force is committed to three viable depots. The depot workforce is appropriately sized and maintains the requisite technical competencies to support our weapon systems. The Air Force depots provide support for the warfighter but also provide needed competition in the sustainment of our weapons systems.

Additionally, the Air Force has developed a 5-yr funded depot improvement plan and identified key investments for FY24–28. The plan includes investments in facilities/infrastructure through the Military Construction (MILCON), and Facilities Sustainment, Restoration, and Modernization (FSRM) programs, equipment through the Capital Investment Program (CIP), and Digital Depot (IT) program.

Mr. SCOTT. What is the recapitalization rate of active duty Air Force buildings and facilities? What is the recapitalization rate of Air Force Reserve buildings and facilities? What is the recapitalization rate of Air National Guard buildings and facilities?

Mr. OSHIBA. Based on current funding projections and the size of our physical plant, the DAF recapitalization rate for active duty, Air Force Reserve and Air National Guard facilities is approximately 123 years. This is significantly longer than the typical design life of a facility. The DAF uses Facility Sustainment, Restoration, and Modernization funds to maximize and extend the useful life of facilities as much as possible. However, we currently carry a \$28 billion backlog of deferred maintenance and repair requirements.

QMr. SCOTT. It has been widely reported that the Air Force is shutting down 10 on-base hotels because of financial problems and I have heard that the Navy's hotels aren't in much better financial shape. The Army has partnered with a private hotel company to run its hotels and they are doing well financially. Are you considering a similar partnership?

Mr. OSHIBA. The Department of the Air Force is considering various options to sustain the long-term viability of the lodging portfolio. We have met with the Army's Privatized Lodging office to better understand their operating model and will continue to explore this and other options to sustain and improve our lodging portfolio to meet mission requirements. The closures mentioned were not related to financial performance. The DAF has spent the last year right sizing the lodging room inventory based on demand, these closures were based on low occupancy rates, and underutilization.

QUESTIONS SUBMITTED BY MS. SHERRILL

Ms. SHERRILL. Last May, Marine Corps Logistics Base Albany became the first DOD installation to achieve net zero electricity status, with the base producing 100% of the energy they use. MCLB Albany was able to achieve their net zero climate and energy resilience goals through incorporating innovative energy technologies, such as a biomass steam turbine, landfill gas generators and advanced microgrid controls into their installation. Other carbon pollution-free resources include wind and solar power alternatives, including new systems such as GAF Energy's integrated solar roofs that directly integrates solar technology into roof shingles.

Secretary Berger, congratulations on the success of MCLB Albany on reaching net zero status. Can you elaborate on some of the challenges that MCLB Albany faced

in achieving net zero as well as lessons learned, recommendations, and take-aways from that process so that the other services can avoid those pitfalls as they work towards net zero installations?

Secretary Owens, Secretary Jacobson, Secretary Berger, and Mr. Oshiba, can you each highlight what your organization is doing to ensure your services' installations are on track to meet the administration's 2021 federal mandate of 100% carbon pollution-free electricity by 2030 and a 65% emissions reduction from federal operations by 2030? What resources do you need to achieve the federal mandate, and what are you currently lacking?

Mr. OWENS. As will be elaborated more fully in the DOD Greenhouse Gas (GHG) reduction plan required by Section 323 of the FY22 National Defense Authorization Act (NDAA), the Department takes a broad-based approach to reducing GHG. This approach recognizes that we must meet emissions reductions goals in a manner that enhances or preserves operational effectiveness and ensures installation energy resilience. The pathways that we are taking to reduce GHG emissions can be placed into two broad categories: reducing demand and substituting clean energy and materials.

These approaches apply to GHG emissions reductions both for operational and installation energy. For our installations, reducing energy demand is critical to enhancing resilience and reducing emissions. Planned efforts related to demand reduction include improving data availability, reducing gross facility footprint and introducing efficiency upgrades. Scaling the Department's use of clean energy includes transitioning to a zero emissions non-tactical vehicle (NTV) fleet and achieving net-zero emissions installations.

Consistent with EO 14057, the Department intends to transition its electricity use to 100% CFE on an annual basis by 2030. The Department has begun evaluating how to revise its purchasing methods, with initial solicitations in progress in Texas, North Carolina, and South Carolina. The Department anticipates close coordination with other government agencies, especially GSA and DOE, to achieve a "whole-of-government" approach to leverage the purchasing power of the U.S. Government. The Department is also pursuing on-site clean energy generation technologies including advanced nuclear power and next-generation geothermal. Other actions include expanding consultations with CFE suppliers and creating a center of excellence at Defense Logistics Agency-Energy Office.

For GHG emissions related to Operational Energy, the Department is reducing demand by increasing platform efficiency, exploring new operating concepts; and fielding new, more capable equipment. In addition, we are substituting current fuels with sustainable liquid fuels, preferably produced in a distributed manner, and pursuing alternative power generation technologies.

The Department is also exploring ways in which construction techniques and materials can sequester carbon. For example, the Department was an early adopter of cross-laminated timber (CLT) construction techniques that have lower embodied GHG emissions. DOD is also seeking to expand this approach to include steel, concrete, and other advanced materials.

Regarding the need for resources to achieve federal mandates, the Department appreciates the support it has received from Congress to meet resilience and sustainability requirements and so doing strengthen our lethality, resilience, and efficiency posture. Presently, the Department's GHG reduction plan, as well as specific strategies for CFE, efficient buildings and ZEV, are being integrated into our installation and energy master-planning processes to create holistic solution pathways. This iterative process will inform any additional resource requirements that may need to be addressed through the Department's Planning, Programming, Budgeting and Execution (PPBE) process.

Ms. SHERRILL. Secretary Owens, DOD's Climate Adaption Plan 2022 Progress Report released last October highlights how the Department is incorporating climate and energy resilience requirements into key strategy and planning documents. What is the current status of DOD's comprehensive installation assessments? How does the DOD plan to prioritize installation improvements to increase energy redundancy and strengthen energy resiliency? Can you elaborate on the current status of the DOD Climate Assessment Tool (DCAT)? How successful has DCAT been in helping the DOD prioritize installation vulnerability to climate related hazards and making changes to reduce those vulnerabilities?

Mr. OWENS. The Department is developing a policy for integrated installation resilience against current and future extreme weather, climate change, facility-related control systems (FRCS) cyber threats, and other human-induced hazards. This policy will guide integrated planning and is expected to be released in Calendar Year (CY) 2023.

The DOD Climate Assessment Tool (DCAT) currently contains Extreme Weather and Climate Change Hazard Reports for 1932 locations in the Continental U.S., Alaska, Hawaii, and 336 locations internationally. By the end of April 2023, all major installations will be included plus an additional 71 international locations. Analogues of DCAT have been produced for six partner nations: Australia, Germany, Italy, Japan, the Republic of Korea, and the United Kingdom.

DCAT output has been incorporated in a variety of resilience investment programs. This includes the Readiness Environmental Protection Integration Program (REPI), the Defense Health Agency capital investment program, and the All-Hazards Threat Assessments (AHTA). DCAT output is also included in climate wargaming.

The Department prioritizes energy resilience investments for critical installation missions, according to our list of Mission Assurance Priority Installations, and for critical missions at other installations based on the Services' priorities, as reflected in our annual guidance for ERCIP. ERCIP guidance includes the use of DCAT in identifying climate exposure and appropriate adaptation for energy resilience investments.

Ms. SHERRILL. Alternative fuels can be more cost effective, reliable, and cleaner than fossil fuels. As we have seen over the past year, U.S. dependence on foreign nations for oil can create issues of both cost and availability. It also significantly increases the amount of carbon released into the atmosphere. Private companies, such as Maersk, which has its U.S. headquarters in my district, have been working to advance technology utilizing these fuels, such as biofuels and e-fuels.

The Army Climate Strategy addresses the importance of more effective power solutions that reduce GHG emissions. In both the FY23 Omnibus and NDAA, funds were allocated to the Department of Defense to invest in these types of fuels.

I'd like to hear from each witness about any unique challenges in the integration of these alternative fuels into operations and whether there are places where its integration is not feasible.

Mr. OWENS. The Department is making investments to ensure we can use drop-in compatible Sustainable Aviation Fuel (SAF) and naval marine fuels in our platforms and infrastructure. Beginning in FY22, the Department initiated the certification and testing of additional alternative fuels already approved in the commercial market, as well as additional pathways in the approval pipeline, to ensure DOD is ready to use alternative fuels available on the global market. DOD testing will ensure that these alternative fuels are compatible with DOD equipment and infrastructure, and builds on previous DOD approvals of four alternative fuels for use in tactical platforms.

Similar to the private sector, the primary challenge to the adoption of drop-in compatible alternative fuels is cost and limited availability. In operational terms, the production of alternative fuels closer to the point of use could reduce the risks facing the storage and distribution of liquid fuels in a contested logistics environment. To this end, the Department is supporting a pilot demonstration to better understand the technological and operational implications of on-site refining of alternative fuels.

Ms. SHERRILL. Secretary Owens, the GAO recently released a report earlier this month on Military Child Care and DOD efforts to provide affordable quality care for families. The report detailed steps the DOD is taking to address child development center staffing shortages and long wait times for new enrollees due to limited child care spaces. What is the DOD planning to do or currently doing to address these issues to improve sustainability and access to affordable child care for service members? What is the projected building timeline for the seven new CDCs that were included in FY2022 appropriations? Given that the GAO report highlights how this issue is particularly impactful for junior service members, are there any efforts planned or currently underway to alleviate those issues?

Mr. OWENS. The Department recognizes the importance of providing military families and civilians with access to quality, affordable Child Development Programs (CDP), and is committed to addressing the increased demand and challenges to sufficiently meet the needs for quality and affordable childcare. On September 22, 2022, SECDEF released the Taking Care of Our Service Members and Families memorandum highlighting efforts to meet the childcare need. The expansion of Military Child Care in Your Neighborhood PLUS (MCCYN-PLUS) provides increased opportunities for childcare fee assistance in Arkansas, Colorado, Kentucky, Maryland, Nevada, North Carolina, Texas, Virginia, Washington, and Miami-Dade County, Florida. The Department also expanded the Child Care in Your Home pilot to a total of 11 locations: the National Capital Region; Norfolk, Virginia; San Diego, California; Hawaii; San Antonio, Texas; Colorado Springs, Colorado; Seattle/Tacoma, Washington; Jacksonville and Fort Walton Beach, Florida; Fayetteville, North Caro-

lina; and Las Vegas, Nevada. Finally, to assist with military child development program (CDP) staff recruitment and retention, the Department standardized a minimum 50 percent employee discount for the first child of CDP direct-care workers to improve staff recruitment and retention. The Department continues to develop additional strategies to increase access to quality, affordable childcare in coordination with the Military Services. The CDC projects funded in FY 2022 are in various stages of execution. The Army projects are progressing through design and the Air Force projects are in acquisition.

Ms. SHERRILL. Last May, Marine Corps Logistics Base Albany became the first DOD installation to achieve net zero electricity status, with the base producing 100% of the energy they use. MCLB Albany was able to achieve their net zero climate and energy resilience goals through incorporating innovative energy technologies, such as a biomass steam turbine, landfill gas generators and advanced microgrid controls into their installation. Other carbon pollution-free resources include wind and solar power alternatives, including new systems such as GAF Energy's integrated solar roofs that directly integrates solar technology into roof shingles.

Secretary Berger, congratulations on the success of MCLB Albany on reaching net zero status. Can you elaborate on some of the challenges that MCLB Albany faced in achieving net zero as well as lessons learned, recommendations, and take-aways from that process so that the other services can avoid those pitfalls as they work towards net zero installations?

Ms. BERGER. Each installation has unique opportunities and challenges regarding its energy and water needs, and DON is developing a guidebook for installation commanding officers to understand the tools, authorities, and resources available to them. MCLB Albany's success can be attributed to innovative and diverse financing mechanisms, partnerships, and long-term commitment.

First, MCLB successfully leveraged energy financing mechanisms and multiple funding sources to achieve net zero electricity outcomes and expand resilience capabilities with limited appropriations. The Department of the Navy awarded three Energy Savings Performance Contracts at MCLB Albany—between 2003 and 2009 to Chevron, and in 2016 to Constellation New Energy (CNE). Each initiative built additional capability to reduce energy demand and increase generation capability: lighting upgrades, HVAC controls, efficient transformers, landfill gas cogeneration, smart grid controls, and a steam turbine that uses waste steam from the neighboring 50-megawatt industrial biomass steam plant. MCLB also has an Enhanced Use Lease agreement with Georgia Power Company for ~150 acres and 44 megawatts direct current/31 megawatts alternating current, of on-site solar power generation, which is delivered directly to the utility grid while MCLB Albany gained a new 12-megawatt substation and express feeder. Finally, MCLB Albany leveraged the Energy Resilience and Conservation Investment Program to construct a landfill gas generator and geothermal heat pumps and identified and tracked multiple funding opportunities to implement energy projects, including four borehole thermal energy storage systems and base-wide HVAC upgrades.

Second, MCLB Albany partnered with local entities to make use of other resources normally unavailable to military installations and create business case opportunities for net zero electricity achievement. MCLB Albany partnered with Proctor & Gamble (P&G), Albany Green Energy (AGE), GPC, and CNE to structure a deal around a biomass steam generator and steam turbine generator. The installation also partnered with Chevron and Dougherty County to construct the landfill gas generator. Dougherty County owns and operates the landfill gas source, and MCLB Albany funded and constructed the landfill gas generators and partnered with Chevron to construct the gas piping. The installation then partnered with Dougherty County to connect the piping to the landfill gas source. Once complete, all three parties conducted joint commissioning of the system before placing it into operation.

Third, MCLB Albany demonstrated that achievement of net zero requires commitment over many years to plan, design, and implement multiple projects and initiatives. The installation committed to pursuing net zero over 15 years ago, including development of a net zero plan in 2011. The net zero vision was embraced by commanding officer after commanding officer, providing continuity of commitment from leadership levels. MCLB Albany's energy team provided the dedication, stability, consistency, and passion required to advance net zero. Advanced clean energy technologies play an important role in both the approach to net zero for installations but also—such as in the case of advanced nuclear technology—can also provide clean and resilient energy in light of current and emerging threats.

Ms. SHERRILL. Secretary Owens, Secretary Jacobson, Secretary Berger, and Mr. Oshiba, can you each highlight what your organization is doing to ensure your serv-

ices' installations are on track to meet the administration's 2021 federal mandate of 100% carbon pollution-free electricity by 2030 and a 65% emissions reduction from federal operations by 2030? What resources do you need to achieve the federal mandate, and what are you currently lacking?

Ms. BERGER. The DON takes a broad-based approach to reducing Greenhouse Gas (GHG), which recognizes that we must meet emissions reductions goals in a manner that preserves operational effectiveness and ensures installation energy resilience. Specifically, the DON is focused on GHG emissions reductions both for operational and installation energy. For our installations, reducing overall energy demand and increasing efficiencies is critical to enhancing resilience and reducing emissions. To reduce demand, the DON is working across multiple fronts, to include: improving data availability to better target opportunities for improvement, reducing gross facility footprint, introducing efficiency upgrades to existing mechanical and electrical systems, partnering with utility providers, electrifying building systems, and increasing sustainable and low-carbon design elements in all new construction projects and planned renovation work. Scaling the Department's use of clean energy includes transitioning to a zero emissions non-tactical vehicle (NTV) fleet and achieving net-zero emissions installations.

For GHG emissions related to Operational Energy, the Department is reducing demand by increasing platform efficiency, exploring new operating concepts, and fielding new, more capable equipment. In addition, we are substituting current fuels with sustainable liquid fuels, preferably produced in a distributed manner, and pursuing alternative power generation technologies to address contested logistics.

The DON is leveraging Third Party Financing and DOD ERCIP funding to deploy, microgrids, onsite renewable generation, and long duration battery storage. Further, the DON is deploying these capabilities in conjunction with Interagency, state and local community partnership to enable mutually beneficial GHG reductions and increased energy and water resilience. Examples include ongoing partnerships in California, Hawaii, Virginia, and Georgia.

The Department appreciates the support it has received from congress in leveraging 10 U.S.C 2912, 10 U.S.C 2913, 10 U.S.C. 2916, Third Party Financing and ERCIP funding that are enabling investments in resilience and sustainability. The DON Chief Sustainability Officer is engaged in the Planning Programing Budgeting and Execution process through POM guidance and policies that strengthen lethality, resilience, and efficiency posture.

Ms. SHERRILL. Alternative fuels can be more cost effective, reliable, and cleaner than fossil fuels. As we have seen over the past year, U.S. dependence on foreign nations for oil can create issues of both cost and availability. It also significantly increases the amount of carbon released into the atmosphere. Private companies, such as Maersk, which has its U.S. headquarters in my district, have been working to advance technology utilizing these fuels, such as biofuels and e-fuels.

The Army Climate Strategy addresses the importance of more effective power solutions that reduce GHG emissions. In both the FY23 Omnibus and NDAA, funds were allocated to the Department of Defense to invest in these types of fuels.

I'd like to hear from each witness about any unique challenges in the integration of these alternative fuels into operations and whether there are places where its integration is not feasible.

Ms. BERGER. Similar to the private sector, the primary challenge to the adoption of drop-in compatible alternative fuels is high cost and limited availability. In operational terms, the production of alternative fuels closer to the point of use could reduce the risks facing the storage and distribution of liquid fuels in a contested logistics environment. To this end, the Department of Defense (DOD) is supporting a pilot demonstration to better understand the technological and operational implications of on-site refining of alternative fuels. The DOD is making investments to ensure we can use drop-in compatible Sustainable Aviation Fuel and naval marine fuels in our platforms and infrastructure. Beginning in FY22, the Department initiated the certification and testing of additional alternative fuels already approved in the commercial market, as well as additional pathways in the approval pipeline, to ensure DOD is ready to use alternative fuels on the global market. Testing will ensure that these alternative fuels are compatible with equipment and infrastructure.

Ms. SHERRILL. Last February, the Army released its Climate Strategy with concrete goals and objectives that will allow the Army to become more energy resilient and increase energy redundancy while faced with extreme weather challenges impacting readiness, increasing the overall effectiveness of the force. And last October, the Army released its Climate Strategy Implementation Plan detailing their plan to respond to threats, increasing installation sustainability and readiness.

Secretary Berger, the Navy recently released its Climate Action 2030 plan in May of last year. Could you expand on the progress made during the 90 day implementa-

tion planning process guide, the status of the Executive Steering Committee stand-up, and any critical initiatives your stakeholders identified during the planning process?

Ms. BERGER. During the 90-day implementation planning process, the Department of the Navy conducted several Executive Steering Committee meetings and working groups with dozens of subject matter experts to identify detailed initiatives to further the goals established in Climate Action 2030. I am releasing those initiatives in a series of memorandums through my role as the DON's Chief Sustainability Officer (CSO). To date, the DON published CSO Serial 1 on Infrastructure (3 January 2023), CSO Serial 2 on Water Security (21 March 2023), and Nature-Based Solutions (28 April 2023). Our next one will cover Acquisition. Follow-on CSO memorandums will guide the DON's actions forward.

Earlier this year, the Marine Corps published Installation and Logistics 2030, which looks at sustaining the Force in the 21st century while recognizing that the operating environment is contested across all domains and at global scale every day. For the Navy, Global Strategy Ashore seeks to enable and improve Fleet readiness, transform logistics to better sustain the Fleet, and to sustain the momentum for evolving wartime support across the sustainment kill-chain. Both the Navy and the Marine Corps are making installations ready for the contested environment with a focus on energy, utility, and climate resiliency, and the ability to recover rapidly after an attack.

Ms. SHERRILL. Last year I had the opportunity to visit and tour Picatinny Arsenal, where I was able to see both our new state-of-the-art EOD facilities and as well as the much older and worn down software center, which still houses a highly talented workforce that are winning awards while rain leaks in their building. The Pentagon has expressed concern regarding growing deficiencies in critical laboratory infrastructure across the department. Heidi Shyu, undersecretary of defense for research and engineering, said during a May 12, 2022 congressional hearing before our CITI subcommittee that her top priority is upgrading the department's labs. Secretary Jacobson, what progress and updates can you provide on how the DOD is prioritizing which labs to upgrade and when can Picatinny Arsenal's labs and engineering facilities be expected to be upgraded?

Ms. JACOBSON. The Army recognizes the importance of its laboratory and test facility infrastructure. These facilities are critical for the efficient and effective development of new combat systems to provide Soldiers with materiel for a decisive advantage in conflict.

The Army also recognizes that many of its RDT&E activities reside in aged, failing and marginally functional facilities. The Army prioritizes lab and test facility projects in consideration of all Army facility requirements as constrained by available funding.

The Army's FY24 Budget Request features a Ground Transport Equipment Building at Detroit Arsenal for \$72 million to assess the durability and reliability of current and future tactical vehicle fleets. Additionally, the Army's FY 24–28 Future Years Defense Program includes an Ammunition, Explosives and Toxics Research Building at Picatinny Arsenal for \$77 million, programmed for FY 27. Within the unspecified minor military construction program, an Ammunition Storage Igloo is currently under construction at Picatinny Arsenal for \$5.3 million.

Ms. SHERRILL. Last May, Marine Corps Logistics Base Albany became the first DOD installation to achieve net zero electricity status, with the base producing 100% of the energy they use. MCLB Albany was able to achieve their net zero climate and energy resilience goals through incorporating innovative energy technologies, such as a biomass steam turbine, landfill gas generators and advanced microgrid controls into their installation. Other carbon pollution-free resources include wind and solar power alternatives, including new systems such as GAF Energy's integrated solar roofs that directly integrates solar technology into roof shingles.

Secretary Berger, congratulations on the success of MCLB Albany on reaching net zero status. Can you elaborate on some of the challenges that MCLB Albany faced in achieving net zero as well as lessons learned, recommendations, and take-aways from that process so that the other services can avoid those pitfalls as they work towards net zero installations?

Secretary Owens, Secretary Jacobson, Secretary Berger, and Mr. Oshiba, can you each highlight what your organization is doing to ensure your services' installations are on track to meet the administration's 2021 federal mandate of 100% carbon pollution-free electricity by 2030 and a 65% emissions reduction from federal operations by 2030? What resources do you need to achieve the federal mandate, and what are you currently lacking?

Ms. JACOBSON. The Army Climate Strategy (ACS) and Implementation Plan (ACS-IP) synchronize climate-related efforts across the force to increase capability; enhance installation resilience; prepare for new threats and operating environments; and modernize processes, standards, and infrastructure while cutting operational energy demand and greenhouse gas emissions. The ACS outlined Army goals consistent with EO 14057 requirements for carbon-free electricity (CFE) and greenhouse gas (GHG) emissions reduction, and the ACS-IP sets interim targets to ensure the Army is making quick progress on these goals.

In FY22, the Army estimated that almost 45% of its installations' electricity came from CFE sources: 4.1% from onsite CFE and 40.6% from purchased CFE through their utility commodity providers. Additionally, the Army has a robust pipeline of 40+ new CFE projects in FY23–27 that, once operational, will add over 130 MW of new CFE generation to our existing nearly 750 MW of CFE generation capacity. Many of these projects are coupled with battery storage and integrated into microgrids to support both the Army's CFE and resilience objectives. Through 2022, the Army had reduced GHG emissions by 41.3% from the 2008 baseline. In addition to driving GHG reductions through energy efficiency projects, the Army is working to innovate construction and planning efforts to reduce GHG emissions associated with building construction and operations.

The Army will continue to leverage all available authorities and resources, especially performance contracting and 3rd party financing, to meet the federal mandates and Army goals in these areas. The Army is committed to accomplishing the objectives of EO 14057 and the Army climate strategy to ensure our installation meet the mandates of 100% CFE by 2030 and 65% emissions reduction from federal operations by 2030.

Ms. SHERRILL. Alternative fuels can be more cost effective, reliable, and cleaner than fossil fuels. As we have seen over the past year, U.S. dependence on foreign nations for oil can create issues of both cost and availability. It also significantly increases the amount of carbon released into the atmosphere. Private companies, such as Maersk, which has its U.S. headquarters in my district, have been working to advance technology utilizing these fuels, such as biofuels and e-fuels.

The Army Climate Strategy addresses the importance of more effective power solutions that reduce GHG emissions. In both the FY23 Omnibus and NDAA, funds were allocated to the Department of Defense to invest in these types of fuels.

I'd like to hear from each witness about any unique challenges in the integration of these alternative fuels into operations and whether there are places where its integration is not feasible.

Ms. JACOBSON. The Army is working with the other Services and the Defense Logistics Agency to qualify and certify jet fuel made from alternative production pathways as drop-in replacements for use in Army equipment. To date, the Army has qualified jet fuel manufactured through two alternative pathways when blended with conventional petroleum for use in all Army equipment, and certified Army aircraft to use alternative jet fuel from two additional pathways. Currently, the Army has completed testing fuels from four additional pathways which are awaiting final approval for use.

The greatest challenge to adopting these alternative fuels is their higher cost and limited availability. Because these alternative fuels are intended to replace traditional petroleum-based jet fuels, technical feasibility should not be a challenge. However, integration of replacement fuels could be stymied by limited production or higher cost. The Department is prohibited legally from paying a premium for alternative fuels. Title 10 U.S.C. 2922h prohibits purchase of drop-in fuels for operational purposes unless the fully burdened cost of the drop-in fuel is cost-competitive with the fully burdened cost of a traditional fuel available for the same purpose.

Ms. SHERRILL. Last February, the Army released its Climate Strategy with concrete goals and objectives that will allow the Army to become more energy resilient and increase energy redundancy while faced with extreme weather challenges impacting readiness, increasing the overall effectiveness of the force. And last October, the Army released its Climate Strategy Implementation Plan detailing their plan to respond to threats, increasing installation sustainability and readiness.

Secretary Jacobson, it's great to see you again. I enjoyed your guided tour at the Pentagon Energy Expo last year that showcased emerging energy-related capabilities. What updates do you have on the current status and execution of the Army's Climate Strategy and the Army's Climate Strategy Implementation Plan as well as the progress on feasibility studies?

Ms. JACOBSON. The Army has made much progress towards achieving the tasks outlined in its Army Climate Strategy (ACS) Implementation Plan in line with the goals of (1) achieving 40% reduction in Army net greenhouse gas (GHG) emissions by 2030 (compared to 2008 levels), (2) attaining net-zero Army GHG emissions by

2050, and (3) proactively considering the security implications of climate change in strategy, planning, acquisition, supply chain, and programming. . The Army is making progress as set forth below, based on the lines of effort (LOE) in the ACS.

First, the Army continued to enhance resilience and sustainability at its installations (LOE 1: Installations) by:

- Increasing the number of microgrids (28 operational, 9 under construction, and 26 in design as of May 2023) to ensure installations have continued power and can operate their critical missions during a climate-induced event.
- Awarding 13 new carbon-free electricity (CFE) projects in FY22. Once operational, these projects will generate 53 megawatts of new CFE. In FY22, the Army consumed 34.5% of electricity from CFE sources (5.2% from onsite CFE and 29.3% from purchased CFE).
- Starting planning actions to identify emissions profile and feasible/suitable alternatives for replacing building systems emissions. The Army has reduced GHG emissions from the Army real property portfolio by at least 38%, from a 2008 baseline.
- Producing guidance on implementation of ASA IE&E Building Automation Systems (BAS) Policy and beginning additional coordination with Commands to identify gaps in current guidance and where updates are needed.
- Converting its non-tactical vehicles (NTV) into electric vehicles (EVs) with 2,583 ordered for FY22, although, due to lack of supply, only half that number was delivered. For FY23, Army ordered 2,291 EVs.
- Completing pilot Installation Climate Resilience Plans (ICRPs) at Fort Carson, Anniston Army Depot, USAG Alaska (Fort Wainwright and Fort Greely) and Fort Bliss. Three additional pilot ICRPs are underway (at Fort Cavazos, Fort Stewart, and Fort Liberty). The ICRPs provide a path for installations to address the threats of climate change holistically in the Real Property Master Plans by identifying climate-related risks and steps to address those risks.

Second, the Army is making strides in tactical vehicle electrification and contingency basing energy efficiency (LOE 2: Acquisition and Logistics). These programs will provide a battlefield advantage to the force, reduce supply chain vulnerability, and decrease Soldier risk. Specifically, the Army is taking the following actions:

- Developed anti-idle retrofit kits for Joint Light Tactical Vehicles (JLTVs) and Family of Medium Tactical Vehicles (FMTVs) to enable silent watch, with procurement planned for 2025.
- Initiated testing of two Bradley Hybrid-Electric Vehicle Prototypes at Aberdeen Proving Grounds to assess the operational benefits of integrating a hybrid electric drive into a combat platform.
- Awarded a Small Business Innovation Research contract in September 2022 through the Army Applications Laboratory to demonstrate additional configurations and more ruggedized tactical battlefield recharge.
- Initiated the electric Light Reconnaissance vehicle (eLRV), a new start program for 2023, which will provide a substantial competitive advantage through reduction in acoustic, thermal signature, silent mobility, increased dash speed, extended range, and increased reliability.

Third, the Army is preparing the force to be ready to operate in a climate altered world (ACS LOE 3: Training) by:

- Continuing to build awareness in future leaders about resilience, operational energy, and climate change through a partnership with the United States Military Academy at West Point by establishing the Sustainable Infrastructure, Resilience, and Climate Consortium (SIRCC).
- Issuing task orders by Army Training and Doctrine Command (TRADOC) in March 2023 directing the following actions:
 - Collect and publish climate and weather-related adaption and mitigation best practices and climate change related lessons learned every two years beginning in FY24.
 - Produce a digital handbook of potential individual training modifications that could reduce Army GHG emissions beginning in FY26.
 - Incorporate climate literacy in Professional Military Education (PME) and Civilian Education System (CES) programs.

Ms. SHERRILL. Last May, Marine Corps Logistics Base Albany became the first DOD installation to achieve net zero electricity status, with the base producing 100% of the energy they use. MCLB Albany was able to achieve their net zero climate and energy resilience goals through incorporating innovative energy technologies, such as a biomass steam turbine, landfill gas generators and advanced microgrid controls into their installation. Other carbon pollution-free resources include wind and solar power alternatives, including new systems such as GAF Ener-

gy's integrated solar roofs that directly integrates solar technology into roof shingles.

Secretary Berger, congratulations on the success of MCLB Albany on reaching net zero status. Can you elaborate on some of the challenges that MCLB Albany faced in achieving net zero as well as lessons learned, recommendations, and take-aways from that process so that the other services can avoid those pitfalls as they work towards net zero installations?

Secretary Owens, Secretary Jacobson, Secretary Berger, and Mr. Oshiba, can you each highlight what your organization is doing to ensure your services' installations are on track to meet the administration's 2021 federal mandate of 100% carbon pollution-free electricity by 2030 and a 65% emissions reduction from federal operations by 2030? What resources do you need to achieve the federal mandate, and what are you currently lacking?

Mr. OSHIBA. The department's current budget submission includes sufficient resources to achieve the Administration's mandates and timelines.

DAF is seeking novel approaches and technology to deliver carbon pollution-free electricity (CFE) to installations, supporting infrastructure, and vehicle fleets, and provide continuous and reliable power to maintain mission continuity. There are several CFE projects underway through a variety of execution vehicles—power purchase agreement (PPA), Enhanced Use Lease, Utility Energy Service Contract, and Energy Resilience and Conservation Investment Program. Examples include:

- Partnering with the Defense Logistics Agency Energy to execute a PPA with a third-party developer, who will license, own, and operate a micro-reactor, to deliver electricity on Eielson AFB property in exchange for DAF's long-term purchase of the energy it generates.
- Working with the Defense Innovation Unit (DIU) to leverage geothermal technological innovation from industry to meet installation electricity needs at Mountain Home AFB, Idaho and Joint Base San Antonio, Texas. The prototype will utilize onsite, behind-the-meter, geothermal technology that can produce resilient electricity on a 24/7 basis to meet critical loads by relying on underground heat resources without directly relying on above ground water resources or impacting underground drinking water resources.
- Supporting several CFE pilot projects to inform future decisions about the procurement of CFE for domestic installations. This includes working with the Electric Reliability Council of Texas (deregulated market) and South Carolina Duke Energy Territory (regulated market) on pilot efforts. An additional CFE pilot is currently in early planning stages for Colorado.

Ms. SHERRILL. Alternative fuels can be more cost effective, reliable, and cleaner than fossil fuels. As we have seen over the past year, U.S. dependence on foreign nations for oil can create issues of both cost and availability. It also significantly increases the amount of carbon released into the atmosphere. Private companies, such as Maersk, which has its U.S. headquarters in my district, have been working to advance technology utilizing these fuels, such as biofuels and e-fuels.

The Army Climate Strategy addresses the importance of more effective power solutions that reduce GHG emissions. In both the FY23 Omnibus and NDAA, funds were allocated to the Department of Defense to invest in these types of fuels.

I'd like to hear from each witness about any unique challenges in the integration of these alternative fuels into operations and whether there are places where its integration is not feasible.

Mr. OSHIBA. The Department of the Air Force (DAF) has a goal to reduce greenhouse gas emissions and is collaborating with industry to lead innovative pilots, delivering combat power to the warfighter with less fuel.

The increased demand for zero-carbon-based energy sources can be seen across the commercial market, including zero-emission vehicles (ZEVs). To keep pace with this transition, DAF is building and communicating requirements to streamline acquisition pathways in order to meet ZEV acquisition goals of 45% in 2025; 77% in 2030; and 100% in 2035 and beyond. Due to current supply chain challenges, DAF has a near-term focus on General Services Administration (GSA) leased ZEVs while preparing "Make-Ready" infrastructure for future incoming vehicles. DAF is developing a streamlined process to identify concentrations of ZEV candidates and Electric Vehicle Supply Equipment (EVSE) through the DAF Fleet Electrification Pilot Program. This pilot program, which is just underway, will inform training and facility needs for future DAF-owned ZEV and EVSE operations and management.

To reduce demand for fuel in our aircraft we have funded a series of initiatives that reduce drag on our aircraft and increase the efficiency of our engines and our mission planning processes. However, the DAF will continue to consume large quantities of liquid fuels for the foreseeable future and as outlined in our climate action plan, as Sustainable Aviation Fuel (SAF) becomes more prevalent in the market, we

must be prepared to leverage SAF to build resiliency, flexibility, and security into the energy logistics supply chain for storage, distribution, and transportation to the end user. The DAF maintains close coordination with the Commercial Aviation Alternative Fuels Initiative (CAAIFI), the International Air Transport Association (IATA), DOE, and other users to ensure that as SAF becomes more prevalent on the commercial market, it is drop-in compatible with our aircraft.

Ms. SHERRILL. Last February, the Army released its Climate Strategy with concrete goals and objectives that will allow the Army to become more energy resilient and increase energy redundancy while faced with extreme weather challenges impacting readiness, increasing the overall effectiveness of the force. And last October, the Army released its Climate Strategy Implementation Plan detailing their plan to respond to threats, increasing installation sustainability and readiness.

Mr. Oshiba, the Air Force also published its Climate Action Plan this past October. Can you provide an update on the current implementation status as well as your plan for modernizing infrastructure and facilities?

Mr. OSHIBA. We released our Climate Action Plan in Oct 22, which defines how we will preserve operational capability and increase resilience through specific and measurable objectives and key results. We will soon publish our Climate Campaign Plan, which identifies the specific actions we must accomplish to produce the key results. Each action includes stakeholders, performance metrics, drivers and requirements, baseline, and outcomes. Our priorities are to:

- Invest in resilient installations to operate unimpeded in all threat environments
- Leverage data and data analytics to make informed decisions
- Optimize aircraft energy use to increase readiness and operational capability
- Diversify energy sources to increase mission assurance

Collaboration with allies and partners, national laboratories, innovation units, academia, industry, and multiple sectors at the federal, state, and local level enables and empowers us to leverage transformative approaches and technology.

We use our Military Construction and Facilities Sustainment, Restoration and Modernization funding to accomplish key mission and quality of life requirements and incorporate attributes to increase resiliency against the effects of climate change. Every project accounts for future climate change and the possibility of increased severe weather events through application of Unified Facilities Criteria (UFCs) in design, as well as thoughtfully siting projects using authoritative flood data. Adapting to future changes in climate also includes using nature-based solutions which can be less costly, self-maintaining, and providing multiple lines of defense against storms. As part of its rebuild from Hurricane Michael, Tyndall AFB is investing in up to 1,000 feet of living shorelines, 3,500 feet of submerged shoreline, and 1,500 feet of new oyster reef habitat.

QUESTIONS SUBMITTED BY MS. ESCOBAR

Ms. ESCOBAR. Mr. Owens, my district is home to the University of Texas at El Paso, or UTEP, which is renowned for being a powerhouse in additive manufacturing innovation. How closely are you tracking the applicability of these technologies to milcon projects, and what are some opportunities you can identify for academic institutions to partner with the Department on innovative testing of new construction materials and designs?

Mr. OWENS. To address the effects of extreme conditions on mission critical building infrastructure and reduce embodied emissions, the Department has begun looking at additive manufacturing in part through our Research and Engineering Defense Innovation Unit. While we have updated our Unified Facilities Criteria to allow limited implementation such as additive concrete construction, pilot efforts are still underway to determine where it is applicable. Regarding academic partnership, the Department's Environmental Security Technology Certification Program (ESTCP) funds academic, industry, and federal innovation projects. ESTCP recently established the Climate Resilience program area with the objective of developing climate resilience construction metrics and technologies.

Ms. ESCOBAR. Castner Range, in northeast El Paso, Texas was acquired by Fort Bliss in 1926 for ordnance and munitions training. The U.S. Army ceased all operations at Castner Range in the early 1970s. Although the area is safe, there is still a risk of potential munitions debris that may become exposed through erosion or encountered in the ground during construction activities. How does the Department prioritize funding for the cleaned up of formerly used defense sites (FUDS) such as Castner Range?

Ms. JACOBSON. Because Castner Range is still under the control of the Army, it is not a Formerly Used Defense Site, however, cleanup is underway under the Army's active sites cleanup program and is still several years from completion.

Although not currently safe for public access, the property has been restricted and limited to authorized Army personnel since the range closed in the 1960s to ensure safety. In general, cleanup sites are prioritized across the Army based on risk to human health and the environment, with highest risk sites sequenced for action before lower risk sites. Because of its long history of live-fire training, Castner Range is a higher priority site than many others.

The recent Presidential Proclamation designating Castner Range a National Monument includes language that will ensure that the cleanup at Castner Range remains a priority for the Army. The Army appreciates the continued funding provided by Congress, which is necessary to support and sustain the Army's cleanup progress at Castner Range and other sites across the Army.

Ms. ESCOBAR. Ms. Jacobson, in your testimony you mentioned that the Army is administering an Installation Climate Resilience Plan assessment for Fort Bliss. Can you provide a timeline as to when you expect that assessment to be completed?

Ms. JACOBSON. The Fort Bliss Installation Climate Resilience Plan is scheduled for completion in June 2023.

Ms. ESCOBAR. Ms. Jacobson, what milcon and infrastructure priorities are being tracked by your office as they pertain to milcon requirements of Fort Bliss?

Ms. JACOBSON. My office is tracking, as Fort Bliss's number one installation infrastructure project, the Fort Bliss Rail Yard, which will improve our ability to rapidly project armored combat formations in support of combatant commanders. The Army is requesting \$74M for this project in our Fiscal Year FY24 Budget Request. Additionally, the Army's FY24-28 Future Years Defense Program, includes construction of two Collective Training Barracks and one Shipping and Receiving Building in FYs 26 and 27, respectively. Other Fort Bliss priorities include vehicle maintenance shops, company operations facilities, secure operations facilities and road improvements. The Army will continue to assess these projects for funding in future budget cycles in consideration of all other Army priorities and available MILCON top line.

For FY23-24, the planned R&M investment at Fort Bliss is \$79M, to make improvements at one Permanent Party Barracks, eleven Enlisted Training Barracks and one Fire Protection System.

QUESTIONS SUBMITTED BY MR. MOYLAN

Mr. MOYLAN. Assistant Secretary Owens, in your testimony you state that a "long term" extension of H-2B visas is needed to meet DOD's construction requirements. Would a failure to extend H-2B create a risk that critical DOD construction projects fall behind schedule or go uncompleted? Additionally, would this inability to proceed with DOD construction disadvantage the United States in the Indo-Pacific?

Mr. OWENS. Without extended relief through at least Dec 31, 2029 in both Guam and the CNMI from the H-2B visa requirement to demonstrate temporary need, DOD will face significant cost increases and extreme schedule delays in all major construction programs on Guam and the CNMI, significantly degrading the Department's readiness posture and ability to deter PRC aggression and respond to crisis or conflict within the Indo-Pacific area of operations.

The Department has several ongoing and upcoming key posture actions in Guam and the CNMI that will require historic levels of military construction. Guam's construction workforce is already overextended, and ongoing and planned projects require a workforce more than three times as large as the local construction workforce. It is difficult to find workers willing and able to work in construction in Guam's harsh climate and given the limited housing on Guam it requires workers willing to live in barracks.

Without extended relief from the H-2B visa requirement to demonstrate temporary need, costs will increase, and construction timelines are expected to at least double. Even if additional funding is provided, this will render the DOD unable to implement key posture actions within expected timelines (Missile Defense Agency Defense of Guam, Polaris Point expansion, Marine Corps relocation, Tinian Divert) and other planned Guam and CNMI Pacific Deterrence Initiative projects would likely be delayed by more than a decade. Ultimately, reliance solely on local and domestic workforce capacity would delay final completion of critical DOD infrastructure by 10 to 20 years due to both cost and timeline overruns.

Mr. MOYLAN. Ms. Berger, in 2005 the USS San Francisco ran aground in the western pacific and was successfully repaired on Guam. By contrast, when the USS Connecticut ran aground in 2021 and proceeded to Guam, it languished in harbor

unable to be repaired. Can you please speak to the dangers posed by America's backslide in ship repair capacity in the western pacific and the importance of facilities such as Guam's now closed dry dock?

Additionally, what are some specific ship repair assets/facilities that you would like to see return to Guam, or be placed there for the first time?

Ms. BERGER. The Navy remains committed to maintaining a robust pier-side ship repair capability on Guam, including funding infrastructure repairs to Lima, Mike, and November wharves in Guam to support additional maintenance capability. Plans for future projects include: repairs to Glass Breakwater; Oscar, Papa, and Quebec wharves; dredging to support Roll On Roll Off (RORO) operations at Lima wharf, additional energy resilience, construction of a new pier on Polaris Point to support Virginia Class Block V submarines; and improvement to Kilo and Lima wharves. Currently, forward-based submarine tenders EMORY S LAND (AS 39) and FRANK CABLE (AS 40) provide repair, supply, weapons handing, and tending for submarines homeported and visiting Guam. The Navy added 154 Full Time Equivalents in FY24 to support the Pearl Harbor Naval Shipyard & Intermediate Maintenance Facility-Guam Detachment.

