

THE IMPACTS OF COVID-19 ON THE ENERGY INDUSTRY

HEARING BEFORE THE COMMITTEE ON ENERGY AND NATURAL RESOURCES UNITED STATES SENATE ONE HUNDRED SIXTEENTH CONGRESS SECOND SESSION

JUNE 16, 2020



Printed for the use of the
Committee on Energy and Natural Resources

Available via the World Wide Web: <http://www.govinfo.gov>

U.S. GOVERNMENT PUBLISHING OFFICE

COMMITTEE ON ENERGY AND NATURAL RESOURCES

LISA MURKOWSKI, Alaska, *Chairman*

JOHN BARRASSO, Wyoming

JAMES E. RISCH, Idaho

MIKE LEE, Utah

STEVE DAINES, Montana

BILL CASSIDY, Louisiana

CORY GARDNER, Colorado

CINDY HYDE-SMITH, Mississippi

MARTHA MCSALLY, Arizona

LAMAR ALEXANDER, Tennessee

JOHN HOEVEN, North Dakota

JOE MANCHIN III, West Virginia

RON WYDEN, Oregon

MARIA CANTWELL, Washington

BERNARD SANDERS, Vermont

DEBBIE STABENOW, Michigan

MARTIN HEINRICH, New Mexico

MAZIE K. HIRONO, Hawaii

ANGUS S. KING, JR., Maine

CATHERINE CORTEZ MASTO, Nevada

BRIAN HUGHES, *Staff Director*

LUCY MURFITT, *Chief Counsel*

TRISTAN ABBEY, *Senior Policy Advisor for Strategy and Economics*

RENAE BLACK, *Democratic Staff Director*

SAM E. FOWLER, *Democratic Chief Counsel*

BRIE VAN CLEVE, *Democratic Senior Energy Advisor*

DARLA RIPCHENSKY, *Chief Clerk*

CONTENTS

OPENING STATEMENTS

	Page
Murkowski, Hon. Lisa, Chairman and a U.S. Senator from Alaska	1
Manchin III, Hon. Joe, Ranking Member and a U.S. Senator from West Virginia	2

WITNESS

Nalley, Stephen, Deputy Administrator, U.S. Energy Information Administration, U.S. Department of Energy	4
Turk, David M., Acting Deputy Executive Director, International Energy Agency	10
Jacobson, Lisa, President, Business Council for Sustainable Energy	17
Macchiarola, Frank J., Senior Vice President, Policy, Economics and Regulatory Affairs, American Petroleum Institute	41
Roberts, Jackie, West Virginia Consumer Advocate, and President, National Association of State Utility Consumer Advocates	51

ALPHABETICAL LISTING AND APPENDIX MATERIAL SUBMITTED

American Exploration & Production Council:	
Statement for the Record	122
American Fuel & Petrochemical Manufacturers:	
Letter for the Record	126
American Gas Association:	
Letter for the Record	128
American Public Gas Association:	
Letter for the Record	130
American Public Power Association:	
Statement for the Record	134
America's Power:	
Statement for the Record	139
Biotechnology Innovation Organization:	
Letter for the Record	142
Electric Power Supply Association:	
Statement for the Record	146
International Association of Drilling Contractors:	
Statement for the Record	155
International Liquid Terminals Association:	
Statement for the Record	157
Jacobson, Lisa:	
Opening Statement	17
Written Testimony	19
Responses to Questions for the Record	104
Large Public Power Council:	
Letter for the Record	160
Louisiana Mid-Continent Oil and Gas Association:	
Letter for the Record	166
Macchiarola, Frank J.:	
Opening Statement	41
Written Testimony	43
Responses to Questions for the Record	111
Manchin III, Hon. Joe:	
Opening Statement	2

IV

	Page
Murkowski, Hon. Lisa:	
Opening Statement	1
Nalley, Stephen:	
Opening Statement	4
Written Testimony	7
Response to Senator Barrasso's question regarding temporary federal royalty relief	70
Response to Senator Barrasso's question regarding nuclear fuel imports ...	72
Responses to Questions for the Record	91
National Rural Electric Cooperative Association:	
Statement for the Record	168
Roberts, Jackie:	
Opening Statement	51
Written Testimony	53
Responses to Questions for the Record	117
Solar Energy Industries Association:	
Letter for the Record	171
Turk, David M.:	
Opening Statement	10
Written Testimony	12
Responses to Questions for the Record	101

THE IMPACTS OF COVID-19 ON THE ENERGY INDUSTRY

TUESDAY, JUNE 16, 2020

U.S. SENATE,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
Washington, DC.

The Committee met, pursuant to notice, at 10:07 a.m. in Room SD-366, Dirksen Senate Office Building, Hon. Lisa Murkowski, Chairman of the Committee, presiding.

OPENING STATEMENT OF HON. LISA MURKOWSKI, U.S. SENATOR FROM ALASKA

The CHAIRMAN. Good morning, everyone. The Committee will come to order. We are here today to discuss the impacts of the COVID-19 pandemic on the energy industry with a special focus here in the United States.

Though every layer and every facet of American society has seemingly been affected, oftentimes dramatically, by the pandemic, it is clear to me that as Chairman of this Committee the energy sector has suffered acutely and uniquely. Energy is the foundation of our economy. Limits on business, travel and social activities in an effort to contain the virus have had far reaching consequences for our nation's energy producers in terms of fossil fuels, renewables, and advanced technologies, such as nuclear power. The resulting decline in demand can be found just about everywhere. Less flying means less jet fuel, less driving means less gasoline and diesel, less commercial activity means less electricity, less consumption means less production and less investment today means less development tomorrow. So, for a producing state like Alaska, less production and less investment and less development are pretty ominous signs over the horizon. That is why I hope, truly, the demand has been paused, rather than destroyed.

Energy is, all at once, a finished product, a feedstock, a raw material, an input, an output, a value added good, a natural resource, a tradeable commodity, and a precious asset. It is critical infrastructure and emergency reserves, financial collateral, and competitive exports. And let's not forget it is also a source of high-paying and high-skilled jobs in its own right. All these factors are why the American energy sector is well-positioned to accelerate our nation's economic recovery.

Take the oil industry. Less than five years ago we repealed the outdated ban on American oil exports. In short order, we saw our nation flip from a net energy importer to a net energy exporter, a truly generational shift. Today production has fallen. Prices are er-

ratic. Stakeholders in the sector are justifiably worried about their family's futures. But the oversupply and low prices that we have seen may also incentivize new businesses to be created. We are seeing reports that many companies are looking to make their supply chains more resilient by shifting more of their necessary infrastructure and capital back home to the United States. That has been a point that my friend and colleague, Senator Manchin, continues to raise. I also continue to believe that Congress should revisit its many mandates to the Department of Energy to sell off hundreds of millions of barrels of crude oil in the coming years. The Department's recent purchase of some 120,000 barrels is a step in the right direction, but I think we need to do more than just inch forward in the right direction. We need to refill our strategic stocks when the prices are low, and as prices rise we are missing a great opportunity. It is not rocket science to figure out that you buy when the prices are lower.

Our panel of witnesses today is uniquely qualified to comment on some of these matters. We welcome representatives from the Energy Information Administration (EIA), the International Energy Agency (IEA) and private sector officials covering oil, natural gas, electricity, renewables and clean energy sources. For those interested in supply chains, we also have a hearing scheduled for next week on minerals' role in forming and strengthening them. That is another topic that has really come to the fore during this pandemic, and it rests at the intersection of the important work that is being done today.

With that, I turn to my colleague, the Ranking Member, Senator Manchin, for your comments.

**STATEMENT OF HON. JOE MANCHIN III,
U.S. SENATOR FROM WEST VIRGINIA**

Senator MANCHIN. Thank you, Madam Chairman, and thank you for convening this hearing to discuss the impact of COVID-19 on the energy sector. I would be remiss if I did not first acknowledge the more than 117,000 Americans and 88 West Virginians who have lost their lives to COVID-19. I know everyone in this room is heartbroken for their friends and loved ones and continues to keep them in their thoughts.

I wanted to welcome our panel of distinguished witnesses and give a special thank you to Jackie Roberts, who serves both as the President of NASUCA, the National Association of State Utilities Consumer Advocates, but also as our West Virginia Consumer Advocate. She fills some big shoes and is doing a great job—I have all the greatest respect for what you do to keep everybody honest and make sure that we are taking care of the citizens and not putting undue burdens on the citizens of West Virginia.

No sector of our economy has gone unscathed, and today's witnesses will help the Committee begin to take inventory of the devastation of the energy sector from the workers to the businesses to our international standing. In a matter of months, we have gone from record low unemployment to the highest rate since the Great Depression. Between March and April, the energy industry has lost 1.3 million jobs. That is a 13 percent drop that essentially wipes out all industry-wide job growth in the last five years. We have

seen job losses across the board nationwide from clean energy with over 620,000 lost jobs to the motor vehicle sector and the traditional energy sector which includes mining, fuels and electricity. Just in my State of West Virginia, 9,400 jobs in the energy sector were lost, two-thirds of which are traditional energy jobs. These job losses are impacting each of our states and our constituents are hurting.

Many Americans can't keep up with their bills and they are having to choose between paying their utility bills and putting food on their table. Most states and many utilities have taken steps to prevent utility customers from being disconnected for non-payment. The middle of the pandemic is not the time to cut people off from critical electricity, gas or water service. I look forward to hearing from Jackie as the President of the Association of Utility Consumer Advocates about what assistance customers need and what state regulators are doing to protect customers in the short- and long-term.

Energy markets have also taken a hit. U.S. energy consumption is expected to drop 5.7 percent in 2020. We saw historic lows, even negative prices, for domestic oil. Domestic production is also down in response to global market dynamics and decisions from international players that resulted in an oversupply of crude oil in the market. We also saw energy projects halted and put into limbo because of labor loss or supply chain disruptions. Just as our country was weakened by our lack of domestic medical equipment production, in the energy sector, it was weakened by insufficient domestic manufacturing of critical energy components. I have been focused on this issue as increasing our domestic energy manufacturing seems like it is a good way to create jobs while also shoring up our supply chain. It is a win-win in my book.

The COVID-19 pandemic has also brought into sharper focus the importance of science and technology to help us solve today's challenges and capitalize on tomorrow's opportunities. Today the Department of Energy (DOE) and the national labs are putting their supercomputers to work to understand the Coronavirus and screen drug compounds to expedite vaccine development. There is more that labs can do, like using CO₂ to decontaminate N-95 masks and other PPE at the National Energy Technology Lab (NETL) in my home state in Morgantown, West Virginia. I have been pleased to see Secretary Brouillette in support of using the labs to help the nation respond to this pandemic. This work is critical to guiding American technology advances and ensuring that we have the scientific and technical capabilities to seize opportunities and address our most pressing problems whether that be a pandemic or climate change. I spoke with Dr. Birol, again, just within the last few weeks and he stressed the importance of enacting legislation like our bipartisan American Energy Innovation Act as part of our recovery. It is still a great piece of legislation, and we have not given up on it yet.

The CHAIRMAN. That is right.

Senator MANCHIN. We are expecting a 14 percent drop in U.S. CO₂ emissions from the energy sector in 2020. That will be the largest drop ever in our history, but emissions will begin to bounce back as our country reopens.

Our bill provides over \$24 billion in authorizations for an energy innovation roadmap to advance critical technologies like CCUS and energy storage with needed research and development but also with deployment dollars to get these technologies in the ground. We have the bipartisan framework in our energy bill, and I believe that good work can be complemented with additional targeted investment in light of the changes in the intervening months to help our energy sector recover, that put people back to work and also advance our clean energy goals.

With that, I appreciate every one of you for coming today and appearing and helping us through this most difficult of times. I look forward to hearing from you—your views and also impacts to the consumers and global markets and a lot, lot more. Thank you.

The CHAIRMAN. Thank you, Senator Manchin, and thank you for your continued advocacy and push on our energy bill. I think you and I recognize that, particularly as we are looking to assist our economy with recovery, this is ready-made for action. We just need to get around one hurdle and, hopefully, we will be on our way. But thank you for that continued support.

Let's now turn to our witnesses and, as we have been doing these past several weeks, it is a bit of hybrid hearing. Just as there are some members present, there are members who are participating telephonically, by Webex and our witnesses are kind of split on that too. So for those of you who have joined us in person today, thank you, and for those who are with us online today, we appreciate that you are taking this time to join this important conversation.

We are led off this morning by Mr. Stephen Nalley. Stephen is the Deputy Administrator for the U.S. Energy Information Administration. We welcome you back to the Committee.

On the line we have Mr. David Turk, who is the Acting Deputy Executive Director for the International Energy Agency. We welcome you, David.

Ms. Lisa Jacobson has been before the Committee before. Lisa is the President for the Business Council for Sustainable Energy. We appreciate you being here with us.

We also have Mr. Frank Macchiarola. Frank is the Senior Vice President of Policy, Economics and Regulatory Affairs for the American Petroleum Institute. Many of us remember him from his time here in the Senate.

Then as Senator Manchin has noted, Ms. Jackie Roberts is with us as the President of the National Association of State Utility Advocates.

We welcome each of you. We would ask that you try to keep your comments to about five minutes so that we can engage in the conversations back and forth. Your full statements will be included as part of the record, and we will go in the order in which I have introduced you. We will begin with you, Mr. Nalley.

**STATEMENT OF STEPHEN NALLEY, DEPUTY ADMINISTRATOR,
U.S. ENERGY INFORMATION ADMINISTRATION, U.S. DEPARTMENT OF ENERGY**

Mr. NALLEY. Chairman Murkowski, Ranking Member Manchin and members of the Committee, good morning. I appreciate the op-

portunity to testify about the U.S. Energy Information Administration's assessment of the impact of COVID-19 has had on energy markets. My testimony reflects EIA's latest forecast from our June "Short-Term Energy Outlook," or STEO, that was released last Tuesday.

COVID-19 mitigation efforts have resulted in reduced domestic and worldwide economic activity which has caused unprecedented changes in energy supply and demand patterns. For overall context, EIA's June STEO forecast is 7.4 percent decline in U.S. GDP in 2020 which is largely related to COVID-19 mitigation actions. We rely on inputs to our model from IHS market forecasts for U.S. GDP and Oxford Economics for a global GDP. As we all know, travel restrictions and stay-at-home orders have greatly impacted the energy economy, most notably crude oil and petroleum liquids. EIA forecasts the domestic consumption of petroleum liquids will decline in 2020 with gasoline consumption falling almost 13 percent and diesel falling 10 percent. We believe the most significant declines have already occurred and the consumption will recover over the next 18 months; however, we do not expect consumption to return to 2019 levels by the end of 2021. Similarly, global consumption of petroleum and liquid fuels will decrease by more than 8 million barrels per day in 2020 and most of the decline has already occurred.

U.S. crude oil production which reached an all-time high of 12.9 million barrels per day in November 2019, fell to 11.4 million barrels per day in May 2020. We forecast the decline will continue until March 2021. Globally, we forecast that supply will fall by almost 6 million barrels per day in 2020, mainly as a result of voluntary cuts by OPEC and its partner of countries. Given these changes, we expect global liquid fuel inventories to grow by 2.2 million barrels per day in 2020, on average, with inventory builds having peaked in April of this year. Concerning prices, Brent crude oil averaged \$29 per barrel in May compared with \$18 in April as some OPEC producers voluntarily deepened their production cuts beyond the initial April 12th agreement. We expect monthly Brent prices to average \$37 per barrel during the second half of 2020 and rise to an increase of \$48 per barrel in 2021. EIA expects upward pressure on prices to increase as inventories decline in 2021.

COVID-19 mitigation activities have also affected natural gas and electricity markets. Reduced U.S. manufacturing along with lower LNG export have lowered our forecasts of U.S. natural gas consumption in 2020. We expect a four percent decline in U.S. natural gas consumption and a three percent decline in production. Although we forecast recovery in 2021, we do not expect U.S. production and consumption to return to 2019 levels during the forecast period. EIA expects weaker natural gas demand will cause relatively low prices in 2020, but the rising demand into next winter will force upward pressure on prices. We forecast that the U.S. benchmark Henry Hub natural gas spot price will rise to an average of \$3.08 per million BTU in 2021 compared to \$1.75 in May of this year.

In looking at electricity, our June "Outlook" reports 5.7 percent less electricity consumption in the U.S. in 2020 when compared to 2019. We expect all sectors to purchase less electricity this year

with the biggest percent declines occurring in the commercial sector. We expect milder temperatures in 2020 to reduce residential heating and cooling demand and more than offset increased activity from stay-at-home measures that have already been in place. We forecast electricity prices across all retail sectors will vary little in 2020 from their 2019 level.

Our “Outlook” also reports that U.S. coal production will fall by 25 percent in 2020, the result of both decreasing demand for U.S. coal exports and declining coal-fired electric power generation.

In closing, the uncertainties in the current environment are especially challenging. EIA will continue to update our monthly STEO forecast to reflect evolving energy market conditions. Our next STEO is scheduled to be released July 7th. We will also continue to provide a comprehensive portfolio of data and analysis reports to inform policymakers, market participants and the public at large about important energy trends and issues.

Chairman Murkowski, Ranking Member Manchin and members of the Committee, thank you for the opportunity to present this information today. This concludes my testimony.

[The prepared statement of Mr. Nalley follows:]

Statement of Stephen Nalley
Deputy Administrator
U.S. Energy Information Administration
U.S. Department of Energy
Before the
Energy and Natural Resources Committee
United States Senate
June 16, 2020

Chairman Murkowski, Ranking Member Manchin, and Members of the Committee, I appreciate the opportunity to testify about the U.S. Energy Information Administration's (EIA) assessment of the effects the 2019 novel coronavirus disease, or COVID-19, has had on energy markets. My testimony reflects EIA's latest assessment and forecast as published in our June *Short-Term Energy Outlook*.

Even during less challenging times, market outlooks like our *Short-Term Energy Outlook* are subject to many uncertainties. Because we update the *Outlook* monthly, recent editions have reported significant changes in energy markets as we learn more about the evolving effects of mitigation efforts related to COVID-19. Reduced domestic and worldwide economic activity have resulted in unprecedented changes in energy supply and demand patterns. We will continue to study these effects and report what we learn in our monthly updates.

This month's *Outlook* reflects a forecast decline in U.S. gross domestic product of 7.4% in 2020, largely related to continued mitigation efforts related to COVID-19. Because EIA focuses solely on energy issues, we are not in a position to generate a broader macroeconomic forecast, and we have long used IHS Markit forecasts as the basis of our U.S. gross domestic product forecast and Oxford Economics forecasts for global gross domestic product.

As a result of the effects of travel restrictions and stay-at-home orders on the U.S. economy, EIA forecasts that domestic consumption of petroleum liquids, will decrease, with gasoline consumption falling by nearly 13% in 2020 and diesel decreasing about 10%. We believe that the most significant declines in domestic consumption of petroleum liquids have already occurred and consumption will grow over the next 18 months. Nevertheless, we do not expect to see a return to 2019 consumption levels by the end of 2021. Similarly, global consumption of petroleum and liquid fuels will decrease by more than 8 million barrels per day in 2020, with most of the decrease having already occurred during the second quarter of this year.

U.S. crude oil production, which reached an all-time high of 12.9 million barrels per day in November 2019, had fallen by 1.5 million barrels per day as of May 2020. We expect to see a continued decline in U.S. crude oil production until March of next year. Globally, we forecast that supply will fall by almost 6 million barrels per day in 2020. The decrease in non-U.S. supply is mainly the result of voluntary cuts by the Organization of the Petroleum Exporting Countries, or OPEC, and its partner countries.

Given these changes in demand and supply, we expect that global liquid fuels inventories will grow by an average of 2.2 million barrels per day in 2020. We estimate that inventory builds

peaked during April, which was the result of a sharp decline in global oil demand because of widespread travel limitations and reduced economic activity.

The Brent crude oil price averaged \$29 per barrel in May, \$11 per barrel higher than in April as a result of a number of OPEC producers that deepened their production cuts beyond the initial April 12 agreement to voluntarily decrease production. We expect that monthly Brent crude oil prices will average \$37 per barrel during the second half of 2020 and rise to an average of \$48 per barrel in 2021. Although large inventories and spare crude oil production capacity will temper prices during the coming months, we expect upward price pressures will increase as inventories decline into 2021.

Beyond crude oil and liquid fuels, reduced economic activity related to COVID-19 mitigation efforts has had far-reaching effects on natural gas and electricity markets in the United States and globally.

We expect to see both natural gas consumption and production in the United States decline in 2020, with consumption declining by about 4% and production falling by nearly 3%. Despite our forecast of a recovery in 2021, we do not expect U.S. production and consumption to return to 2019 levels. Reduced manufacturing activity in the United States, along with lower exports of liquefied natural gas, have lowered our forecast of U.S. consumption in 2020. Weaker natural gas demand will keep prices relatively low in 2020, but we expect that rising demand into next winter, in the face of lowered production, will exert upward pressure on natural gas prices at the end of 2020 and into next year. We forecast that the U.S. benchmark Henry Hub natural gas spot price will rise to an average of \$3.08 per million British thermal units in 2021, compared with \$1.75 per million British thermal units in May of this year.

In our June *Outlook*, we reported 5.7% less electricity consumption in the United States in 2020 than in 2019. The biggest declines occur in the commercial sector, although we expect all sectors to purchase less electricity this year. For residential customers, milder expected temperatures compared with 2019 reduce our outlook for space heating and cooling. These milder temperatures more than offset increased use of residential electricity as more people work and spend more time at home while social distancing guidelines remain in place. We forecast retail electricity prices for all the residential sector to increase slightly, while the commercial and industrial sector retail electricity prices will fall by about 1% in 2020.

Our *Outlook* also reports that U.S. coal production will fall by 25% in 2020, the result of both decreasing demand for U.S. coal exports and declining coal-fired electric power generation in the United States. Metallurgical coal mines in Appalachia have slowed production as a result of reduced demand for coking coal for global steel production, while production in the West declines, in part, because of slowing demand for steam coal from key importers such as India.

In addition to our *Short-Term Energy Outlook*, we have published new analysis and data products to improve the public's understanding of energy markets during the COVID-19 pandemic. For example, changes in petroleum product demand and relatively slower changes in crude oil production led to rapid increases in U.S. petroleum inventories in March and April. This sudden increase quickly diminished available crude oil storage capacity in the United States

and caused concern among market participants, which added to uncertainty in the market. In response to these concerns, including those shared by Chairman Murkowski in her letter to the EIA Administrator on March 31, in early April, EIA began to track and update U.S. crude oil storage utilization in a *Weekly U.S. and Regional Crude Oil Stocks and Working Storage Capacity* report.

We have also published a number of articles in our *Today in Energy* series that explain how information in various EIA products can help the public understand what is happening in energy markets. These articles include in-depth explanations of key petroleum data products, such as the *Weekly Petroleum Status Report* and the *Gasoline and Diesel Fuel Update*. We also published articles on natural gas and electricity, including articles on the *Weekly Natural Gas Storage Report* and the *Hourly Electric Grid Monitor*.

We will continue to monitor events in energy markets globally and continue to update our monthly short-term forecast to reflect our developing understanding of the effects of the mitigation efforts related to COVID-19 on the energy economy.

Chairman Murkowski, Ranking Member Manchin, and Members of the Committee, thank you for the opportunity to present this information, and this concludes my testimony.

The CHAIRMAN. Thank you, Mr. Nalley.

Let's now go to our screen to hear from David Turk at the IEA. Mr. Turk.

STATEMENT OF DAVID M. TURK, ACTING DEPUTY EXECUTIVE DIRECTOR, INTERNATIONAL ENERGY AGENCY

Mr. TURK. Chairman Murkowski, Ranking Member Manchin and distinguished members of the Committee, thank you very much for the opportunity to appear before you today. I wish we were there in person, but at least we're here virtually. I'm very pleased to be able to share with all of you our very latest data and analysis from the IEA on the impact of COVID-19 on energy markets. Put simply, the COVID-19 pandemic has created the biggest shock to global energy systems since at least World War II. So let me run through some of our numbers.

We estimate that global energy demand will fall 6 percent in 2020, the equivalent of losing the entire demand of India. Advanced economies are expected to see the biggest declines with demand falling 9 percent in the U.S. and 11 percent in the European Union. All major fuels and technologies are affected. Our very latest numbers just released earlier today shows that oil demand is expected to fall by 8.1 million barrels per day for 2020. That's an 8.2 percent drop, the largest in history, before recovering by 5.7 million barrels per day in 2021. Coal demand will fall 8 percent, electricity demand will fall 5 percent, natural gas demand falling 4 percent, renewables have been the most resilient of all the fuels so far and the only energy source that we expect to grow in 2020, although, I should say, at much lower levels than we forecast before the crisis.

Global energy-related CO₂ emissions are set to fall by almost 8 percent in 2020 reaching their lowest level globally since 2010. This would be the largest decrease in emissions ever, nearly 6 times the decrease we saw in the 2009 financial crisis. But this decline, of course, comes on the back of many premature deaths and economic trauma around the world. History has also shown that unless there are smart and concerted recovery efforts around the world, more on that in a minute, emissions can be expected to come roaring back just as they did in 2009.

Now let's look at our latest investment numbers from the IEA. At the start of 2020, global energy investment was on track for record growth of around 2 percent from 2019. After the COVID-19 pandemic brought large swaths of the world economy to a standstill, global investment is now expected to fall 20 percent. So we had predicted a 2 percent increase, now we're looking at a 20 percent decrease. This is almost \$400 billion. Global investment in oil and gas expected to fall by almost a third in 2020. Power sector spending is on course to decrease by 10 percent. Energy efficiency is also suffering. Estimated investment in energy efficiency is set to fall by an estimated 10 to 15 percent.

Now let me take this opportunity to again thank Chairman Murkowski for being a leading member of our Global Commission for Urgent Action on Energy Efficiency. Thank you very much, Chairman, for all your leadership in that very important group.

So, distinguished members of this Committee, you can see that we truly have a historic shock to the global energy system. But our story is, of course, far from finished. What happens next will be absolutely critical. Countries around the world are planning and enacting economic recovery plans that will shape country's energy infrastructure for decades. On Thursday, just two days from now, we will be releasing our "World Energy Outlook Special Report on Sustainable Recovery." This special report, which I predict will be our most impactful analysis of the year, will provide actionable recommendations across the energy system on how governments could put energy and sustainability at the heart of stimulus plans to boost economies, to create jobs and build more modern, resilient and clean energy systems. With its boundless human ingenuity, rich resources and track record of successful innovation of new technologies, the United States is extremely well-positioned to continue to lead the world in the development and deployment of energy technologies that can help ensure a secure, affordable and sustainable supply of energy for decades to come.

Chairman Murkowski, Ranking Member Manchin, distinguished members of this Committee, thank you again for the opportunity to be with you today and thank you for your continued support and partnership for the International Energy Agency. Thank you, Chairman.

[The prepared statement of Mr. Turk follows:]

Written Testimony – David M. Turk, Acting Deputy Executive Director, IEA – 16 June 2020

**Hearing of the U.S. Senate Energy and Natural Resources Committee
Impacts of Covid-19 on Energy Industry**

**David M. Turk
Acting Deputy Executive Director
International Energy Agency
Written Testimony**

16 June 2020

Chairman Murkowski, Ranking Member Manchin and distinguished Members of the Committee, thank you for the opportunity to appear before you today.

It is a privilege to work at the International Energy Agency (IEA), and I was honored to have been asked to serve as Acting Deputy Executive Director earlier this year. I am very pleased today to share with you all the IEA's latest data and analysis on the impact of the Covid-19 pandemic on energy markets.

A brief overview of the IEA

Since the founding of the IEA almost 45 years ago, the United States has been a crucial pillar for the Agency. US leadership and support has come from across government, including the White House, the Department of State, the Department of Energy and your unparalleled National Labs.

We are also very much honored by the support from this Committee and from the Congress more broadly. Our Executive Director, Dr. Fatih Birol, is very pleased to have had the honor of appearing before this Committee each of the past four years, most recently in March. All of us at the Agency have benefited from Committee Members' insights and interactions. Let me thank Chairman Murkowski and Ranking Member Manchin, in particular.

Since our founding in 1974, we have evolved to become the leading authority on global energy issues, providing data, analysis and advice to governments and industry on all fuels and all technologies. Today, the IEA has 30 Member countries, and since the start of 2016 we have welcomed eight additional IEA Association countries: Brazil, China, India, Indonesia, Morocco, Singapore, South Africa and Thailand. This broader IEA Family reflects the global nature of energy systems, accounting for almost 75% of the world's energy consumption compared with less than 40% in 2015.

Covid-19 impacts on energy markets

I would like to start by presenting a broad outline of what the global energy system looks like today. It is a very different picture from the one Dr. Birol described to you earlier this year when Covid-19 had yet to turn into a global crisis.

It is important to emphasize, of course, that the world is dealing, first and foremost, with a health emergency and an economic shock that together have resulted in tragic losses of life and livelihoods. As the Members of this Committee are no doubt aware, energy is an essential part of any economy – a critical enabler of countless facets of modern life: work,

Written Testimony – David M. Turk, Acting Deputy Executive Director, IEA – 16 June 2020

school, health care, communications, travel, entertainment to name a few. That is why the tremendous social and economic disruptions brought about by the pandemic are having major impacts across the energy world.

Put simply, the Covid-19 pandemic has created the biggest shock to the global energy system since at least World War II, with the drop in energy demand this year set to dwarf that experienced after the 2008 financial crisis. All of our IEA data and analysis on the impact of Covid-19 on energy systems that I will highlight in this testimony – and much more – can be found at the new Covid-19 page on our IEA website.

A historic shock to the energy world

The IEA has estimated that global energy demand will fall 6% in 2020 – the equivalent of losing the entire demand of India, the world's third largest energy consumer. Advanced economies are expected to see the biggest declines, with demand set to fall by 9% in the United States and by 11% in the European Union. These forecasts, of course, remain sensitive to how the pandemic, confinement measures in different countries and global economic trends play out over the rest of the year.

The Covid-19 crisis is affecting all major fuels and technologies, although some are suffering more than others. Let me give you a quick rundown of what we expect this year across key parts of the energy sector globally:

- Oil demand is set to fall by 9%;
- Coal demand is set to fall by 8%;
- Electricity demand is set to fall by 5%;
- Natural gas demand is set to fall by 4%; and
- Renewables are the only energy source that will grow in 2020 (Even though renewable power generation is set to buck the trend and grow this year, the industry is still under pressure. The world is on track to build fewer wind turbines, solar plants and other installations that produce renewable electricity because of the impact of Covid-19, marking the first annual decline in new additions in 20 years.)

As a result of all these trends – mainly the declines in coal and oil use – global energy-related CO2 emissions are set to fall by almost 8% in 2020, reaching their lowest level since 2010. This would be the largest decrease in emissions ever recorded – nearly six times larger than the previous record drop of 400 million tonnes in 2009 resulting from the global financial crisis. This decline, of course, is not a reason to celebrate as it comes on the back of premature deaths and economic trauma around the world.

Energy investment set to plunge

The Covid-19 pandemic has set in motion the largest drop in global energy investment in history, with spending expected to plunge in every major sector – from fossil fuels to renewables and efficiency. This unparalleled decline is staggering in both its scale and swiftness, with serious potential implications for energy security and clean energy transitions.

Written Testimony – David M. Turk, Acting Deputy Executive Director, IEA – 16 June 2020

At the start of 2020, global energy investment was on track for growth of around 2%, which would have been the largest annual rise in six years. But after Covid-19 brought large swathes of the world economy to a standstill, global investment is now expected to fall by 20%, or almost \$400 billion, compared with 2019.

This plunge in investment is troubling for many reasons. It means lost jobs and economic opportunities today, as well as lost energy supply that we might well need tomorrow once the economy recovers. The slowdown in spending on key clean energy technologies also risks undermining much-needed transitions to more resilient and sustainable energy systems. Companies with weakened balance sheets and more uncertain demand outlooks are cutting back on investment while projects are also being hampered by lockdowns and disrupted supply chains. In the longer-term, a post-crisis legacy of higher debt will present lasting risks to investment. This could be particularly detrimental to the outlook in some developing countries, where financing options and the range of investors can be more limited.

Global investment in oil and gas is expected to fall by almost one-third in 2020. The shale industry was already under pressure, and investor confidence and access to capital has now dried up: investment in shale is anticipated to fall by 50% in 2020. For oil markets, if investment stays at 2020 levels then this would reduce the previously expected level of supply in 2025 by over 8 million barrels a day, creating a clear risk of tighter markets if demand starts to move back towards its pre-crisis trajectory.

2019 witnessed a historical peak of new construction starts in liquefied natural gas (LNG), primarily in the United States. The Covid-19 crisis disrupted global gas markets; excess supply and weak demand brought European and Asian prices to a level which challenges the economics of US exports. On the other hand, if we see a rebound of the Chinese economy we expect global gas demand to resume its growth. US LNG continues to play a unique role in enhancing market efficiency and supply security all around the world.

Power sector spending is on course to decrease by 10% in 2020. An expected 9% decline in investment in electricity networks this year compounds a large fall in 2019, and spending on important sources of power system flexibility has also stalled. Investment in natural gas plants is stagnating and spending on battery storage is levelling off. There is also a risk that wholesale market development might lead to a decommissioning of nuclear capacity prematurely.

With weak demand, the same sunshine and wind leads to a sudden increase in the share of variable renewables. Power systems have performed well so far, but many systems critically rely on legacy assets, in which there is insufficient reinvestment. Renewables investment has been more resilient during the crisis than for fossil fuels, although spending on rooftop solar installations by households and businesses has been strongly affected. Final investment decisions in the first quarter of 2020 for new utility-scale wind and solar projects fell back to the levels of three years ago. Social distancing measures, in particular, are affecting rooftop solar installations, as they require personal interaction. This is the largest renewables employment area, so even existing green jobs are at risk.

I would like to underscore that electricity grids have been a vital underpinning of the emergency response to Covid-19 in the United States and all around the world. Grids have also supported essential economic and social activities that have been able to continue under lockdown. These networks have to be resilient and smart to ward against future shocks, and

Written Testimony – David M. Turk, Acting Deputy Executive Director, IEA – 16 June 2020

also to accommodate rising shares of wind and solar power. Today's investment trends are clear warning signs for future electricity security.

Energy efficiency – another central pillar of clean energy transitions – is also suffering. Estimated investment in efficiency and end-use applications is set to fall by an estimated 10-15% as vehicle sales and construction activity weaken and spending on more efficient appliances and equipment is dialed back. Energy efficiency is an especially labor intensive field where well-designed policies could have a very significant impact on job creation. Let me take this opportunity to again thank Chairman Murkowski for being a leading member of our Global Commission for Urgent Action on Energy Efficiency, whose high-level, actionable recommendations will be released later this month.

The United States is also a global leader in CCUS technology. The investment case has become more challenging for many actors in the Covid-19 crisis, but there is still an industrial appetite and a clear strategic need to maintain investment in CCUS.

Conclusion

The IEA looks forward to working with the United States and all our members and partners to help ensure that the transformation of energy systems benefits rather than burdens their citizens and economies. We are also committed to assisting all countries in spreading energy services – with all the advantages they bring for human well-being – to communities around the world that still live without access to energy, most notably in Africa.

In addition to all our ongoing work to track and analyze global energy trends for all fuels and all technologies, let me highlight, in particular, a few key upcoming efforts for which I thought the Committee might be particularly interested:

- To help inform decisions that countries will be making in the context of economic recovery plans that are likely to also shape countries' infrastructure for decades, we will soon be releasing the *World Energy Outlook Special Report on Sustainable Recovery*. This Special Report will provide actionable recommendations on how governments can put energy and sustainability at the heart of stimulus plans to create jobs and build more modern, resilient and clean energy systems.
- Recognising the critical importance of innovation, we will also publish in early July an *Energy Technology Perspectives Special Report on Clean Energy Innovation*, which will quantify the extent to which technologies that are currently at prototype or demonstration stage are the investment opportunity of today to reshape the future.
- Finally, the IEA has made clear that tackling the world's climate challenge and accelerating clean energy transitions calls for a grand coalition encompassing everyone who is genuinely committed to reducing emissions. This coalition needs to span governments, industry, investors and civil society to share innovative ideas and best practices, and inspire one another with greater ambition. To this end, the *IEA Clean Energy Transitions Summit* on 9 July will help governments identify the best approaches for creating jobs, putting emissions into structural decline and increasing energy sector resilience. We are pleased to have already secured the participation of Secretary Brouillette and many other key ministers, CEOs and other energy leaders from around the world for this important Summit.

Written Testimony – David M. Turk, Acting Deputy Executive Director, IEA – 16 June 2020

With its boundless human ingenuity, rich resources and track record of successful innovation and commercialization of new technologies, the United States is extremely well placed to continue to lead the world in the development and deployment of energy technologies that can help ensure a secure, affordable and sustainable supply of energy for decades to come.

Chairman Murkowski, Ranking Member Manchin and distinguished Members of the Committee, thank you again for the opportunity to appear before you today. And thank you for your continued strong partnership and support for the International Energy Agency.

The CHAIRMAN. Thank you, Mr. Turk, and know that we will be looking with great interest at this report that will be coming out on Thursday as we work to consider what comes next in this next round of recovery and support. I think the suggestions that we might be able to learn from will be helpful to us as we craft some additional policy here.

Ms. Jacobson, let's turn to you and your comments from the Business Council for Sustainable Energy. Welcome.

**STATEMENT OF LISA JACOBSON, PRESIDENT, BUSINESS
COUNCIL FOR SUSTAINABLE ENERGY**

Ms. JACOBSON. Chairman Murkowski, Ranking Member Manchin and members of the Committee, thank you for the opportunity to testify today. On behalf of the Business Council for Sustainable Energy (BCSE), I would like to express our appreciation for this Committee's longstanding, bipartisan work. Founded in 1992, the Council is a coalition of companies and trade associations representing energy efficiency, natural gas and renewable energy sectors. BCSE is pleased to have a small business partner under its banner, the Clean Energy Business Network.

Today's hearing is of critical importance as the COVID-19 health crisis has touched every American. We've tragically lost over 117,000 American lives during this pandemic and, in an effort to save lives, the nation is taking unprecedented measures to keep individuals and families safe. In my testimony today I will underscore three main points: the U.S. energy workforce was expanding pre-COVID-19 and now the sector is facing economic challenges and dramatic job losses, the Federal Government can take actions to provide near-term relief and clean energy industries can be drivers of the economic recovery, and the Federal Government has a role to play with policy support.

Clean energy sector employees range from utility, construction and manufacturing workers to contractors, installers and technicians to building managers and service providers. While some workers have received essential status during the pandemic, others, especially workers in the residential sector, have seen their business activity halted or dramatically curtailed. Many clean energy workers have made significant contributions to maintain safe, secure and reliable power and energy services to customers during the pandemic and they continue to do so. Utilities, grid operators and manufacturers adopted sequestering policies for essential workers. Construction workers, electricians and engineers stayed on the job building large-scale energy projects. HVAC technicians worked to maintain and update critical systems in health care, nursing homes and other public facilities. These contributions had an impact. Our country had the electricity it needed at a scary and uncertain time.

The U.S. energy sector supported 6.8 million jobs at the start of 2020. Clean energy sectors supported over 3.4 million jobs and were poised for significant growth. Updated research released yesterday covering energy efficiency, renewable energy, clean vehicles, grid and storage and clean fuel sectors shows that 620,000 jobs were lost since early March. With energy efficiency and renewable energy workers being the hardest hit with 500,000 job losses. While

the rate of job loss slowed in May compared to April and March, over 27,000 jobs were shed last month. While the rate of—well, let's shift to other economic impacts. Project construction and permitting has been delayed, financing has been slowed, and supply chains have been disrupted.

Given the diversity of clean energy sectors, a range of policy solutions are being considered. The objectives are to provide market stability in this uncertain period and to spur investment in jobs for economic recovery when the time is right. The Federal Government took an important step in May when the IRS provided continuity, safe harbor relief to accommodate COVID-19 delays for projects eligible for the ITC and the PTC. I want to thank Chairman Murkowski, Ranking Member Manchin, Senator Wyden, Senator Cantwell, and other members of this Committee for urging the Treasury Department to act. And there are other adjustments to the current law that would provide market continuity and enable the tax incentives on the books to be utilized. Direct pay mechanisms for the ITC and PTC to make the tax provisions refundable is an example and to provide immediate relief to vulnerable families and communities, funding for low income home energy assistance programs should be expanded.

Looking to economic recovery, BCSE members urge action on the American Innovation Act this year. In addition, the mission critical Facility Renewal Program, is an example of a proposal that would leverage federal grant funding with private sector capital to put energy efficiency workers back on the job, providing upgrades to schools, hospitals, military bases and other mission critical buildings.

Looking at the tax code, a number of measures could be implemented to incentivize resilient infrastructure, transmission upgrades, microgrids, renewable energy, energy efficiency and other clean energy investments. In early June over 800 contractors and manufacturers signed a letter to Congress to improve and expand the current Section 25C tax credit for homeowner energy efficiency improvements.

These are just a few of many proposals that clean energy sectors are considering to put people back to work and build back better. Thank you.

[The prepared statement of Ms. Jacobson follows:]

Testimony of

**Lisa Jacobson, President
Business Council for Sustainable Energy**

**United States Senate
Committee on Energy and Natural Resources**

**Examining the Impacts of COVID-19 on the Energy Industry
June 16, 2020**

Chairman Murkowski, Ranking Member Manchin, and Members of the Committee, thank you for the opportunity to testify and to share the Business Council for Sustainable Energy's views on the impacts of COVID-19 on the energy industry.

My name is Lisa Jacobson, and I serve as the President of the Business Council for Sustainable Energy, or BCSE. On behalf of the Council, I would like to express our appreciation for the longstanding bipartisan work of the Senate Committee on Energy and Natural Resources. We commend the Committee for its accomplishments this Congress and look forward to working with its members as it seeks to address pressing federal policy issues impacting the U.S. energy sector in the areas of climate change, energy innovation, grid modernization and resilience, and cyber security.

BCSE is a coalition of companies and trade associations representing the energy efficiency, natural gas and renewable energy sectors. Founded in 1992, the Council advocates for policies that expand the use of commercially available clean energy technologies, products and services. Its membership includes project developers, industrial manufacturers, equipment and technology providers, independent electric power producers, investor-owned utilities, public power companies, and energy and environmental service providers.

BCSE is pleased to have an independent initiative under its banner, the Clean Energy Business Network (CEBN). CEBN represents small- and medium-sized businesses providing clean energy technologies and services.

Together, BCSE and CEBN represent a broad range of the clean energy economy, from Fortune 100 companies to small businesses working in all 50 states. These sectors have been significant growth industries, providing over 3.4 million jobs across the country at the start of 2020, with about 70% of those jobs in small businesses.

Today's hearing is of critical importance, as the COVID-19 health crisis has touched every American. We have tragically lost over 100,000 American lives during this pandemic, and, in an effort to save lives, the nation is taking unprecedented measures to keep individuals and families safe.

The effect of these measures has been to stop or dramatically alter business and social activity in many parts of the country since early March. During this time, the energy sector has performed essential services to society by providing reliable power and energy resources to communities.

These energy services have enabled essential workers, such as healthcare providers and first responders, and critical institutions, such as hospitals and government offices, and also everyday American households to still be able to operate under shelter-in-place policies and other restrictive local ordinances.

In my testimony today, I will underscore four main points:

- The U.S. energy sector performed essential services during the pandemic and will continue to be called upon to do so.
- The U.S. clean energy workforce was expanding pre-COVID-19, and now the sector is facing economic challenges and dramatic job losses.
- The federal government can take actions to provide near-term relief to clean energy industries and workers in this time of crisis.
- And, clean energy industries can be drivers of the economic recovery, and the federal government has a role to play with policy support.

Impacts of COVID-19 on Clean Energy Workers

Clean energy sector employees range from utility, construction, and manufacturing workers, to contractors, installers, and technicians, to building managers and service providers. While some workers have received "essential" status during the pandemic, others – especially workers in the residential sector – have seen their business activity halted or dramatically curtailed.

Many clean energy workers have made significant sacrifices to maintain safe, secure and reliable power and energy services to customers during the pandemic – and they continue to do so. For example, some public and investor-owned utilities, grid operators and manufacturers implemented sequestering policies for their essential employees. These employees often adopted "multiple day on and multiple day off" schedules and were away from family at the height of the pandemic.

Further, the construction of many large-scale energy projects throughout the country continued during March, April and May, with construction workers, electricians and engineers staying on the job. Heating, ventilation, and air conditioning (HVAC) technicians worked to maintain and update critical systems in healthcare, nursing homes and other public facilities to improve ventilation, indoor environmental quality and resilience.

Fuel cell products helped to sustain the resiliency and reliability of the electric utility structure by powering hospitals, datacenters, grocery stores, universities, and thousands of cellphone towers. Further, fuel cell and other clean energy companies are adjusting operations to produce or refurbish critically-needed ventilators and respirators, industrial gas companies are helping to maintain a supply of oxygen and other medical gases for those in need, and suppliers are producing and donating much needed Personal Protective Equipment (PPE).

These contributions had an impact. Our country had the electricity it needed at a scary and uncertain time. The reliability of the power system allowed citizens to stay safely at home, for communities to focus on taking care of the sick and enabled the front lines of the healthcare system, grocery stores and other essential businesses to tackle the pandemic and serve our communities.

In the years preceding the COVID-19 pandemic, BCSE members worked with their customers and clients to make important investments to improve and optimize the electric system, integrate clean and renewable energy, increase energy efficiency and enhance resilience.

While we have much more work to do, these investments demonstrated their value with reliable service, lower energy bills for businesses and families than there would have been, and less stress on the energy

system. Looking ahead, resilience to other disasters – wildfires, hurricanes, droughts, floods, and cyber and other physical threats – are urgently needed. BCSE commends this Committee for its focus in this area.

Economic Impacts of COVID-19 on Clean Energy Sectors

Clean Energy Job Trends

The U.S. energy sector supported 6.8 million jobs at the start of 2020, according to the independent *U.S. Energy and Employment Report* released in March 2020.¹ The energy sector saw 1.8% job growth in 2019. Clean energy sectors supported over 3.4 million jobs at the end of 2019, with around 70% of those jobs in small businesses. Solar photovoltaic installers and wind turbine technicians represented the fastest-growing job sectors in America.²

COVID-19 and the economic restrictions hit all sectors of the U.S. economy. According to the same researchers based on data from March and April 2020, the energy sector lost 1.3 million jobs since early March, a 13% percent decline representing more than the last five years of job growth.³

Updated research released June 15 by E2 (Environmental Entrepreneurs) and other organizations (which includes data from May) covering the energy efficiency, renewable energy, clean vehicles, grid and storage, and clean fuels sectors shows 620,590 jobs lost, with energy efficiency and renewable energy workers being hardest hit with more than 500,000 job losses (431,800 and 100,000 respectively). While the rate of job loss slowed in May compared to April and March for these clean energy sectors, over 27,000 jobs were shed last month.

These clean energy industries are hit harder than the energy sector as a whole:

- Energy efficiency has lost 18.3% of its workforce since the start of the pandemic. Many of the remaining jobs are supported by Paycheck Protection Program (PPP) loans, as the construction sector has received over 13% of the total support from the PPP. The expiration of the PPP could increase the job losses.
- Renewable energy has lost 16.9% of its workforce.
- Clean vehicles, transmission and distribution, and energy storage saw 18.3% reductions.
- Clean fuels lost 12.6% of their workforce, reporting 13,200 jobs lost during the pandemic.

Many of these losses are due to stay-at-home orders or other restrictions that stopped onsite energy efficiency and renewable energy installations. Further, non-essential construction stopped, and many building and project sites were closed.

In addition, utility clean energy programs across the country have ceased, impacting workers who provide demand-side management, renewable energy, and energy efficiency installations and services.

¹ Please see: <https://www.usenergyjobs.org>

² Please see: <https://www.bls.gov/ooh/fastest-growing.htm>

³ <https://e2.org/wp-content/uploads/2020/05/Clean-Energy-Jobs-April-COVID-19-Memo-FINAL.pdf>

Clean Energy Sector Investment and Business Conditions

In the 2010s, clean energy industries led a decade of transformation of the U.S. energy landscape, with dramatic increases in deployment, investment, and jobs. The outlook for 2020 was strong, with clean energy sectors poised for further expansion. Please see Appendix A for the findings of the 2020 Sustainable Energy in America Factbook that details recent clean energy sector trends.⁴

Since the U.S. escalation of the pandemic in early March, the clean energy project and investment pipeline has been significantly interrupted. Project construction and permitting has been delayed, financing has been slowed, and supply chains have been disrupted.

The economic impact of COVID-19 on the energy sector is being felt around the world. The International Energy Agency (IEA) had projected 2% global growth in energy investment for 2020, before the crisis hit.⁵ Now, the IEA projects global investment to decrease by 20% (\$400 billion) compared to last year. Global shale investment is expected to fall 50%, while clean energy and grid investments may decline on the order of 10-15%. These global numbers reflect significant losses for U.S. energy companies in domestic and international markets.

BCSE has conducted two informal surveys of its members on the economic impact of COVID-19 on their businesses since early March.

The most recent survey was conducted the week of June 8. It identified a range of impacts to safety and operations, employment levels, project pipelines and estimated revenue losses. Overall, economic impacts have increased in severity since the first survey period in late March, but have differed in the details, according to regions of the country and industry sector.

In the first survey and through direct conversations with BCSE members, many companies and sectors were seeking guidance on essential worker and project status. Federal guidance released by the Department of Homeland Security's Office of Cybersecurity and Infrastructure Security Agency⁶ in mid-March assisted, and the focus then shifted to state and local ordinances.

Understanding how best to protect the safety and health of employees was the primary concern – and remains so. Ability to procure PPE continues to be an issue. Of note, commercial and industrial insulation contractors reported significant difficulty securing PPE nationwide and managing varied requirements at the local level related to safety plans, temperature checks and contact tracing.

Supply chain disruptions were also reported. It was noted that for some manufacturers and projects that were deemed essential, their suppliers have not received similar status, and this is causing challenges.

Most companies have done their best to keep Americans employed, despite the significant job losses noted earlier in this testimony. One member observed that the PPP was "an effective first step in supporting businesses. The changes made recently to the program should increase its value to many small businesses in the construction industry."

Other companies have instituted furloughs by day, per week or per month, and others have applied across-the-board percentage salary cuts. In the energy storage sector, 25% of companies reported they have already reduced or expect to reduce their workforce in Q2 2020 by up to 20%.

⁴ Please see: www.bcse.org/factbook

⁵ Please see: <https://www.iea.org/news/the-covid-19-crisis-is-causing-the-biggest-fall-in-global-energy-investment-in-history>

⁶ Please see: <https://www.cisa.gov/publication/guidance-essential-critical-infrastructure-workforce>

BCSE members designated as "essential" or whose customers are military or government have experienced less-severe impacts in project and work levels, compared to members that service private homes or commercial operations. For example, around 25% of the U.S. grocery distribution network requires fuel cell-powered forklifts, parts, service, support and hydrogen infrastructure to continue operation, so business demand has remained.

Even when work is permitted, some sectors report delays due to limitations to enter customer premises and the need to make new arrangements for crews to safely travel and to work in confined spaces.

The waste-to-energy sector has reported some compounding challenges, even as its essential services are in high demand. These are facilities that provide renewable energy and solid waste services for local governments, and they face increased financial strain because of COVID-19.

Unlike for other energy generators, the feedstock of these facilities is now infectious, and employee protections (PPE, facility disinfecting, social distancing, etc.) has increased costs. Further, commercial facility closures have resulted in fuel scarcity, leading to curtailments and energy revenue loss.

Both natural gas and electric utilities could face lost revenue as customers may no longer be able to pay their bills. Importantly, utilities have put in place moratoriums on shutoffs to protect customers. But the lost revenue is forecasted to be in the hundreds of millions of dollars in the first half of 2020. In this regard, we wish to thank the Committee for its strong support of funding for the Low Income Home Energy Assistance Program (LIHEAP) to ensure safe and reliable energy to vulnerable children, families, and communities.

Like other American business sectors, some fuel cell companies have reduced operations or shut down manufacturing lines, while facing supply chain uncertainty and a volatile economic market.

According to the *U.S. Solar Market Insight Q2 2020 report*,⁷ released on June 12 by the Solar Energy Industries Association (SEIA) and Wood Mackenzie, the coronavirus pandemic is having a significant impact on the U.S. solar industry. Construction has been delayed, customer purchases have wavered, and access to financing for projects of all sizes has been jeopardized. SEIA separately reports that 72,000 solar jobs have been lost during the pandemic.

Forecasts show that the second quarter of 2020 will show a steep drop off. As a result, in 2020, the residential and non-residential solar markets will see decreases in year-over-year installation volumes of 25% and 38%, respectively, as the segments face challenges posed by work stoppages, permitting delays and drops in consumer demand. Distributed markets will see a combined 32% less solar installed in 2020 than was forecast before the pandemic.

Federal Policy Support for Clean Energy Industries in Response to COVID-19 Business Conditions

The scale and breadth of the economic impacts that clean energy industries are facing is wide and deep. Given the diversity of products, services and business models in clean energy sectors, a range of policy solutions are being considered. As a diverse coalition, not all BCSE members endorse or take positions on the policies described in this section.

The types of federal solutions being contemplated involve support to states, localities and tribes; adjustments to tax policy; regulatory changes; and funding for research, development and deployment

⁷ Please see: <https://www.seia.org/us-solar-market-insight>

(RD&D) initiatives, among other proposals. The objectives are to provide market stability in this uncertain period and to spur investment and jobs for economic recovery when the time is right.

Policies to Provide Relief and Business Continuity

Modifications to current law and utilization of existing authorities and programs can have near-term impacts. As an example, the federal government took an important step to provide immediate relief to the renewable energy sector in May when the Internal Revenue Service provided continuity safe harbor relief to accommodate COVID-19 delays for projects eligible for the Investment Tax Credit (ITC) and the Production Tax Credit (PTC).

I wish to thank Chairman Murkowski, Ranking Member Manchin, Senator Wyden, Senator Cantwell and other members of this Committee for urging the Treasury Department to act. Of note, this type of action is needed with longer-term parameters to support the deployment of offshore wind and other technologies that have a longer project cycle.

There are other adjustments to current law that would provide market continuity and enable the tax incentives on the books to be utilized.

Ideas being discussed by a number of BCSE members include:

- Direct pay mechanisms for the ITC and PTC to make the tax provisions refundable.
- Expansion of eligibility and delaying the phase-downs for clean energy tax measures.
 - This could impact energy storage, carbon capture utilization and storage, and sustainable transportation, in addition to PTC and ITC technologies.
- Changes to net operating loss (NOL) monetization timelines to allow start-ups to monetize their existing tax assets like NOLs to provide liquidity through the crisis.

Policies to Jump Start Economic Recovery

Looking to economic recovery, RD&D, tax, and appropriations policies to support infrastructure investment and public-private partnerships (P3s) are also of interest. Please see Appendix B for a submission that BCSE made in April 2020 on policy proposals for congressional consideration in response to COVID-19.

The following is a small sample of policies that Congress should consider to support clean energy sectors as the economy recovers.

- BCSE members urge action on the American Energy Innovation Act (AEIA) this year as a foundational set of policies with strong bipartisan support that will spur investment and create jobs.
 - The AEIA is a process-driven, consensus-based piece of legislation that includes more than 50 energy-related bills reported on a bipartisan basis by the Senate Committee on Energy and Natural Resources. It includes a range of RD&D initiatives to deploy current technologies and invest in innovative technologies.
- BCSE members also recommend support to states, localities and tribes to manage current cost shortfalls as well as to strategically invest in clean energy sectors and resilience. This can be

accomplished through federal appropriations, grant programs and other financial mechanisms. An important goal with these expenditures is to leverage private sector investment as much as possible.

- The *Mission Critical Facility Renewal Program*⁸ is an example of an economic recovery proposal that would leverage federal grant funding with private sector capital to put energy efficiency workers back on the job providing upgrades to schools, hospitals, military bases and other mission-critical buildings.
- In addition, expansion of federal RD&D initiatives under the Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE), Office of Electricity (OE), Office of Fossil Energy (FE), Office of Electricity Delivery and Energy Reliability (EDER), Advanced Research Projects Agency – Energy (ARPA-E), Office of Advanced Manufacturing (OAM) and Loan Programs Office (LPO), among others can support P3s.
- Further, Congress should invest in bolstering U.S. research and manufacturing capabilities and improving small business access to these resources. BCSE's small business subsidiary, CEBN, has provided several recommendations to this effect.⁹
- When considering federal buildings, there are opportunities to support new construction and renovation aimed at achieving high performing federal buildings and meeting goals for efficiency, net zero energy, and EV charging.
- Looking at the tax code, a number of measures could be implemented to incentivize resilient infrastructure, transmission upgrades, microgrids, renewable energy, energy efficiency and other clean energy investments.
 - In early June, over 800 contractors and manufacturers signed a letter to urge Congress to improve and expand the current Section 25C tax credit for homeowner energy efficiency improvements.¹⁰ Based on past performance, when set at the right level, the 25C tax credit was successful in putting contractors and manufacturers in this industry back to work while making home improvements that lower homeowners' heating and cooling bills, improve home comfort and address important environmental objectives.
 - Additionally, extend and improving the 179D energy efficient commercial building tax deduction, which expires in 2020 is of interest. Updating the deduction in terms of both its value and the required energy efficiency achievement will reinvigorate this incentive to drive private sector investment in building retrofits.

These are just a few of many tax proposals that clean energy sectors are considering to put people back to work and "build back better."

Conclusion

A safe, resilient and reliable energy system is critical to managing the current health crisis and rebounding the economy when the time is right. While clean energy industries have experienced economic hardship as a result of business conditions caused by the COVID-19 pandemic, they have contributed to the resilience of our communities during this difficult time, and will be there to help lead a robust economic recovery. The federal government can provide immediate relief to clean energy industries in the short-

⁸ Please see: https://www.ase.org/sites/ase.org/files/alliance_right_retrofits_proposal_040820.pdf

⁹ <https://www.cebn.org/wp-content/uploads/CEBN-Letter-to-HSST-on-COVID-19-Reponse-04.13.20.pdf>

¹⁰ Please see: https://www.ase.org/sites/ase.org/files/ee-tax_incentive-25c-letter-6320.pdf

term to provide business continuity and can enact policy measures that catalyze investment and create jobs in clean energy industries to support economic renewal.

APPENDIX A

The U.S. Energy Transformation: 2010 to 2019

To provide additional context for the policy perspectives offered in my testimony, I will present some of the findings of the [2020 Sustainable Energy in America Factbook](https://www.bcse.org/factbook). The *Factbook* is a report produced by the Business Council for Sustainable Energy and Bloomberg New Energy Finance. Now in its eighth year, the report details the significant transformation of our nation’s energy sector.¹¹ The 2020 edition was released in February and provides both a 10-year retrospective for 2010-2019 as well as year-on-year changes from 2018 and 2019. A complementary compendium from CEBN entitled [Faces Behind the Facts](#) highlights some of the small to medium-sized clean energy entrepreneurs who are helping to drive this transformation.

The 2010s was a rapid period of change in the energy sector, and particularly for the portfolio of energy efficiency, natural gas and renewable energy. This clean energy portfolio represented the growth sectors of the U.S. energy economy; it supplied more than half of U.S. electricity and employed over 3.2 million American workers.

During this period of energy transformation, the U.S. economy experienced sustained economic growth, falling greenhouse gas emissions and low energy costs for consumers. Other key characteristics of this period include the ability of the U.S. economy to do more with less energy and a clear decoupling of GDP growth with energy use. Further, in the 2010s, renewable energy and energy-smart technologies expanded and attracted \$390 billion in investment, with a record-breaking \$55 billion in investment in 2019 alone. Additional findings from the 2020 *Factbook* include:

- **Clean energy is now driving the U.S. energy sector.** Sustainable energy meets and exceeds America’s needs for maintaining grid reliability and safety, while boosting economic growth and reducing environmental impacts.
- **Today the cheapest energy is also the cleanest.** Retail electricity costs fell, while consumers have the same services and, in some cases, more options. Consumers are now spending 22% less on energy, on average, compared to the start of the decade.
- **Energy efficiency choices have proliferated,** with federal programs helping high-efficiency appliances reach mass markets, and state codes bolstering building efficiency.
- **The economy grew every year in the past decade, and energy use fell in 5 of the 10 years.** U.S. energy productivity (GDP/energy consumption) improved 18% between 2010 and 2019, benefiting businesses and households.
- **Renewable energy became the cheapest new generation source in many U.S. power markets.** The U.S. has over two times more renewable power generating capacity today than a decade ago. The portfolio of renewable energy technologies – biomass, biogas, geothermal, hydropower, solar, waste-to-energy and wind – now provide 18% of U.S. electricity, up from 11% at the start of the decade.
- **Between 2010 and 2019, domestic natural gas production jumped 50%,** and natural gas went from providing 24% of the nation’s electricity to 38%. The U.S. increased its export capacity to

¹¹ <https://www.bcse.org/factbook>

exceed its import capacity, building stronger trade relationships around the world. In 2019, the U.S. exported more gas than it imported. Further, the number of residential natural gas customers grew 8% in the last decade while overall residential consumption of gas rose 5% due to energy efficiency.

APPENDIX B

BCSE Submission to the House Committee on Science, Space and Technology
April 16, 2020



April 16, 2020

The Honorable Eddie Bernice Johnson, Chair
House Committee on Science, Space, and Technology
Technology
2306 Rayburn House Office Building
Washington, DC 20510

The Honorable Frank Lucas, Ranking Member
House Committee on Science, Space, and
2405 Rayburn House Office Building
Washington, DC 20515

The Honorable Lizzie Fletcher, Chair
Subcommittee on Energy
1224 Longworth House Office Building
Washington, DC 20510

The Honorable Randy Weber, Ranking Member
Subcommittee on Energy
107 Cannon House Office Building
Washington, DC 20510

Dear Chairwomen Johnson and Fletcher, and Ranking Members Lucas and Weber:

I am writing on behalf of members of the [Business Council for Sustainable Energy \(BCSE\)](#) to share a preliminary set of recommendations to address and mitigate the impacts of the current COVID-19 crisis. These ideas were collected from the BCSE's members in the energy efficiency, energy storage, natural gas, renewable energy and sustainable transportation sectors for consideration by the House Committee on Science, Space, and Technology.

The COVID-19 pandemic has created unprecedented economic uncertainty in the United States. The American experience over the past decade shows that clean energy sectors have generated millions of jobs and contributed significant economic development benefits to the country. BCSE members look forward to resuming this growth position and returning to commercial activity that will support American workers and the economy in the coming months.

The BCSE recommendations below are focused on innovation, research, development, demonstration and deployment of clean energy technologies, products and services and are intended to help American clean energy sectors address business disruptions, as well as assist with economic recovery.

These ideas are centered around the view that *energy infrastructure is essential infrastructure*. Energy infrastructure supports our nation's first responders and healthcare systems, critical supply chain distribution networks, and community centers, businesses and homes. It is critical to maintain and

improve our energy infrastructure assets not only in response to the COVID-19 pandemic, but also to prepare for future disruptive events. This is especially important when energy infrastructure assets provide additional secondary essential services.

The following sections explore recommendations for COVID-19 economic stimulus and relief policies, which in some cases may fall under multiple jurisdictions, including the House Committee on Science, Space, and Technology; the House Committee on Energy and Commerce; and the House Committee on Transportation and Infrastructure. Please see the following areas of focus:

- [Organizing Principles and Objectives for Policy Recommendations](#)
- [Legislative Tools for Improving and Modernizing American Energy Systems](#): Existing energy legislation proposals, grid modernization and resilience infrastructure grants; research, development and deployment (RD&D) funding; public-private partnerships and financing mechanisms; and support for U.S. manufacturing and workforce development.
- [Expanded Funding for the U.S. State Energy Program](#)
- [Industry Priorities](#): Biomass/Waste-to-Energy, Energy Efficiency, Energy Storage, Hydropower, Natural Gas, Solar Energy, Sustainable Transportation, Wind Energy
- [Support for Small Business in the Energy Sector](#): Regulatory Relief Measures, Program Reforms and Funding Opportunities
- [Next Steps and Areas for Discussion](#)

Please note that this is a preliminary list of recommendations and that not all BCSE members endorse or take positions on all of the recommendations listed below.

Organizing Principles and Objectives for Policy Recommendations

The BCSE offers the following recommendations with three primary objectives in mind:

- Helping people get back to work
- Providing business and investment continuity
- Catalyzing investment in energy, building and transportation infrastructure to ensure a modern and resilient energy system.

Understanding the urgency of action on legislation to help the U.S. economy recover and to stimulate investment and job creation, the BCSE offers policy ideas that **utilize existing authorities and enable the expansion of existing programs as much as possible.**

In addition, the BCSE seeks to highlight legislation that has been reviewed and received broad support from Committees of Jurisdiction and Members of Congress.

Areas of focus include grants to states that can be administered under existing programs, as well as expansion of federal RD&D initiatives under the Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE), Office of Electricity (OE), Office of Fossil Energy (FE), Office of Electricity Delivery and Energy Reliability (EDER), Advanced Research Projects Agency – Energy (ARPA-E), Office of Advanced Manufacturing (OAM) and Loan Programs Office (LPO).

Legislative Tools for Improving and Modernizing American Energy Systems

The BCSE believes that the following legislative tools will help achieve post-COVID-19 national economic recovery and the modernization of U.S. energy infrastructure. These tools include: [existing energy legislation proposals](#); [energy efficiency, grid modernization and resilience infrastructure grants](#); [research, development and deployment \(RD&D\) funding](#); [public-private partnerships and financing mechanisms](#); [support for U.S. manufacturing](#); and [workforce development](#).

Existing Energy Legislation Proposals

The BCSE calls for Congress to **consider the legislative proposals included in S. 2657, the American Energy Innovation Act (AEIA)**:

- The AEIA is a process-driven, consensus-based piece of legislation that includes more than 50 energy-related bills reported on a bipartisan basis by the Senate Committee on Energy and Natural Resources. Consideration of the proposals included in the AEIA should serve as a foundation for the House Committee on Science, Space, and Technology as it looks to address the economic impacts of the COVID-19 pandemic.

Energy Efficiency, Grid Modernization and Resilience Infrastructure Investments

The BCSE recommends the **expansion of energy efficiency, grid modernization and resilience infrastructure** initiatives that will utilize a combination of grants and private sector leverage mechanisms to catalyze new investments. These programs can be administered at the state level for a range of purposes.

- Provide \$6 billion in funding over two years to create a [Small Business Energy Efficiency Grant Program](#) for federal matching funds to support electric and natural gas demand-side management programs addressing the small business sector (retail stores, restaurants, etc.).
 - This program is intended to quickly drive federal matching funds into local communities to put energy efficiency construction workers back to work by incentivizing projects in the small business sector, while delivering long-term savings to small businesses.
- Provide \$22 billion in funding over five years to support retrofits in critical public facilities with the establishment of a [Critical Facility Infrastructure Renewal Program](#). This would allow the rapid transformation of unoccupied spaces to support public health and other emergencies, while improving facility efficiency and resilience, and adaptability for future crises.
 - U.S. public buildings – military, municipal, state, university, school, hospital and national lab buildings, among others – are critical infrastructure that enable federal, state and local governments to fulfill their missions. Over many years, this mission-critical infrastructure has been allowed to decay, building up a deferred maintenance backlog that is estimated to be more than \$1 trillion.
 - A systematic approach to renewing public facilities should be an integral element of the economic recovery from the COVID-19 pandemic. This is a proposal for federal appropriations of \$22 billion over five years through the Department of Energy's State Energy Program (SEP) to leverage private investment through public-private partnerships (P3), performance-based contracts, energy-as-a-service and other financial vehicles. Leveraged with private financing at a 4:1 ratio, this \$22 billion federal investment will deliver

\$110 billion of infrastructure improvements. Federal funds would be reserved for health and safety, resiliency, information technology (IT) infrastructure, cybersecurity and emergency response capabilities, while private funding would be leveraged to deliver efficiency and smart building technology improvements paid over time through energy and operational savings. The federal investment is to be allocated as follows:

- \$18 billion for state/local, K-12, university/college and healthcare buildings by funding the State Energy Program over five years;
 - \$2.5 billion for federal buildings by funding the Federal Energy Efficiency Fund (AFECT), the U.S. Departments of Army, Navy and Air Force at \$500 million each, and the U.S. Department of Veteran's Affairs and General Service at \$250 million each over four years;
 - \$1.5 billion for public housing.
- Provide \$3 billion for improved resilience and energy efficiency in the residential and commercial sectors for both electricity and natural gas. Funded through the State Energy Program, grants could be used for on-site solar, battery back-up systems for on-site storage, on-site gas back-up systems (generators), and energy-efficient equipment for heating, cooling and hot water. The program could be implemented quickly and be administered by utilities or coordinated with them in each state.

The programs highlighted above would provide direct economic impacts for consumers, equipment suppliers and a range of energy sector workers. Further, these programs would enable critical facilities as well as commercial and residential sectors to upgrade and utilize a range of technologies, including combined heat and power systems for reliable energy and heating, as well as provide opportunities for port modernization and resilience.

Of note, Congress should also look for mechanisms to remove barriers to local government microgrids or net metering power from municipal infrastructure, which provides essential services in addition to energy generation to other municipal infrastructure.

Research, Development and Deployment (RD&D) Funding

The BCSE recommends that Congress **expand U.S. Department of Energy (DOE) Applied Research pilots and demonstrations**, and provide:

- \$5 billion for technology deployment, pilots and demonstrations across all DOE Applied Research Programs (EERE, FE, NE, ARPA-E and OE). This funding addresses the "valley of death" issue with bringing more technologies to the market and de-risking newer, more efficient and environmentally sustainable solutions. All DOE applied programs currently have programs for pilots and demonstrations that could be utilized to speed implementation.
 - This funding is important because the scaling up of technologies would positively affect construction and manufacturing bases, providing immediate job benefits. Successful completion of these programs would also lead to increased manufacturing and construction opportunities in commercial deployment, as these technologies hit the market.
 - This should consider including funding for public-private partnership (P3) pilot projects, including opportunities for municipal utilities that own infrastructure that provides multiple community services.

Public-Private Partnerships and Financing Mechanisms

The BCSE recommends that Congress deploy the broad utilization of public-private partnerships (P3s) and finance tools such as Energy Savings Performance Contracts (ESPCs) to aid in the economic recovery. Using these mechanisms leverages public finance and can deliver **five times as much investment** as federal appropriations.

For example, the JFK P3 modernization and transformation project totals \$12 billion, with the state government contributing \$1 billion of the total – an 11x multiple. There are many types of P3s available, from full finance-build-operate-maintenance, to more targeted energy savings/resiliency solutions like a power purchase agreement, energy-as-a-service, performance contracting, etc. All P3 models should be eligible for stimulus-funded projects, with emphasis on P3 projects that can be constructed and commissioned quickly.

- **Provide Funding for States** to establish state revolving loan funds for state and local public facility energy and water efficiency retrofits to lower utility costs for taxpayers, make public facilities (e.g., health care, schools, water treatment, safety) more energy efficient, build community microgrids and leverage private financing for rapid job creation. Section 125 of the Energy Policy Act of 2005, reauthorized as part of the Kelly bill (H.R. 2119) in the House this session, could be the basis. This program could be modeled after the long-successful Texas Loan Star Program and similar state programs that combine Energy Savings Performance Contracting with low-cost revolving loan funds repaid from utility bill savings.
- **Provide Funding to Renovate America’s Schools:** Fund LIFT Act Section 32601 for renovating public schools. These funds should primarily be used to leverage existing state efforts as well as private sector financing and expertise, and to provide technical assistance to school districts with limited capacity to ensure equity.
- **State Energy Efficient Appliance and Insulation Rebate Program** during the American Recovery and Reinvestment Act delivered rapid assistance to homeowners that drove purchases of new, efficient HVAC equipment, room air conditioners, hot water heaters, refrigerators, etc. DOE provided \$300 million to states to establish rebate programs offering immediate help to consumers (especially where the equipment was not functioning) and drove a wave of manufacturing to put people back to work. States’ (and DOE) success at deploying this program rapidly and at very low administrative costs are well documented. Adding building insulation to the appliance rebates would offer great homeowner value and drive job creation in the building trades and insulation manufacturing sectors. This could be dramatically expanded to \$3 billion. (<https://www.energy.gov/eere/buildings/state-energy-efficient-appliance-rebate-program>)

Support for U.S. Manufacturing

Many industrial and critical power facilities today are operating on their original electrical systems, which are often more than 30 years old, unreliable, inefficient, prone to safety risk and unable to take advantage of new opportunities provided by modern electrical distribution, digital tools and cloud-enabled connectivity. Maintaining the United States’ competitive edge depends not only on our RD&D, but on our ability to manufacture in modern, efficient factories. With this goal in mind, the BCSE recommends that Congress:

- Direct the DOE to partner with manufacturers to provide technical assistance and auditing for electrical upgrades and energy efficiency, via existing DOE industrial hubs, and the use of digital tools in factories.
 - Provide \$40 million per year for three years for Industrial Assessment Centers (IACs), located at universities and colleges, to work with small and medium-sized businesses. IACs can implement auditing and work with businesses to implement projects via loans under Community Development Finance Institutions (see below).
 - Provide \$20 million per year for three years to expand the current Better Plants Program to rapidly create a team of federal experts to advise manufacturing facilities on efficiency upgrades, utilizing the model of the Save Energy Now program. Funding would mobilize "SWAT" teams of DOE staff, Industrial Assessment Center staff, contract experts and national lab staff to work with plant staff to implement energy efficiency savings and strategic energy management systems at the plants, and train plant staff in energy efficiency and carbon reduction technologies and programs. This program would coordinate with state and utility programs to leverage this expertise and to provide incentives to expand the impact of their work. This can be implemented through revolving loans.
 - For three years, provide half of the salary for new energy managers at plants to significantly increase capacity. It is shown that facilities with energy managers achieve approximately 10% energy cost savings annually over facilities without managers.
- To help small and medium-sized manufacturers, provide additional credit enhancements for Community Development Finance Institutions for bonding authority guarantees for industrial investments specifically. This will allow credit enhancements through existing lenders with whom the manufacturing firms already have relationships, which will leverage significant action to implement the energy savings.
- Establish a revolving loan program for manufacturers to access capital to upgrade their critical systems. Such a program would allow a facility to "level up" its advanced manufacturing capabilities, including the use of digital tools, full integration and efficiency.

Workforce Development

- Enhance and expand existing programs that provide training and certifications for energy sector workers, including consideration of the Blue Collar to Green Collar Jobs Development Act (H.R. 1315).

Expanded Funding for the U.S. State Energy Program

During the 2008 recession, the U.S. State Energy Program received supplemental funding of \$3.1 billion, which was utilized by states for rapid economic recovery programs and projects aimed squarely at creating energy-related jobs.

The BCSE recommends that similar funding levels be provided to states via the State Energy Program, with congressional direction, to address COVID-19 impacts. Governors, via state energy directors, would make final determinations about specific program details and levels of funding in the relevant sectors. In considering this action, Congress should:

- Provide statutory adjustments to promote flexibility in the Weatherization Assistance Program (WAP) and to preserve the weatherization workforce by:
 1. Increasing the average cost per unit (ACPU) for the current grant cycle (including 2020).
 2. Providing authority for the Secretary of Energy to adjust or waive the ACPU in times of emergency, disaster, pandemic or economic crisis.
 3. Increasing the allowable administrative costs percentage from 10% to 15%.
 4. Changing the date for re-weatherization to "15-year rolling."
 5. Doubling the cost cap for solar to incentivize solar training, and building organizational capacity for future solar installs while production is shut down.
- Reauthorize and expand the Energy Efficiency and Conservation Block Grant (EECBG) Program (H.R. 2088).
- Provide supplemental funding of \$45 million for the DOE Office of Cybersecurity, Energy Security, and Emergency Response (CESER) to offer grants to states, and funding of \$5 million for the DOE to provide assistance to states, local governments and tribal governments.
- Create transportation innovation grants (S. 1939).

Industry Priorities: Biomass/Waste-to-Energy, Energy Efficiency, Energy Storage, Hydropower, Natural Gas, Solar Energy, Sustainable Transportation, Wind Energy

The BCSE also offers the following industry-specific policy priorities, calling for the increase of funding for existing DOE programs and mechanisms. These actions will quickly disperse funding and enable efficient execution of funds as well as provide much-needed investment to support critical sectors of the U.S. economy.

Biomass/Waste-to-Energy

Biomass and waste-to-energy facilities are essential services. Waste-to-energy plants in particular have been dramatically impacted during the COVID-19 pandemic. These plants are required to operate while simultaneously facing a feedstock that is both more challenging to handle due to the COVID-19 outbreak and increasingly scarce, as large volumes of waste are no longer being generated as businesses, schools and manufacturers have closed. Further, the cost of protecting frontline essential service employees has become more expensive.

As such, to maintain the economic viability of these plants in this current circumstance as well as to make them available for any future public emergency, Congress should consider expanding RD&D funding to reduce operating costs and plant building costs. Further, Congress should consider policies and funding, as appropriate, to local governments that own waste-to-energy facilities to help them offset operating costs and overcome barriers to microgrids or net metering. These actions would increase resilience and improve plant economics so tax dollars can be freed up for other critical needs.

In addition, biomass and waste-to-energy both provide renewable energy that is eligible to meet Renewable Fuel Standard (RFS) requirements for transportation purposes. However, guidance from the U.S. Environmental Protection Agency (EPA) is pending to implement this critical pathway. Implementing this pathway and processing applications from biomass and waste-to-energy producers would assist plants that are challenged by declining revenue from the COVID-19 pandemic. Enabling these facilities, already challenged under existing market conditions, to participate in

the RFS will help preserve rural jobs, ensure local governments can continue providing trash services, and protect forestry and agriculture supply chains.

- Provide increased funding to the Bioenergy Technology Office (BETO).
- Provide at least \$2 million in funding to the EPA to provide resources for the inclusion of electricity in the Renewable Fuel Standard program and to speed the processing of pending applications from electricity producers before the agency.

Energy Efficiency: Housing

Energy efficiency jobs are the fastest-growing segment of the energy workforce. Key to continuing that growth and expanding the energy efficiency of homes and housing, Congress should consider:

- Appropriation of \$500 million for contractor Home On-line Performance-based Energy-efficiency (HOPE) training.
- Passage of the HOMES Act – Supporting a Clean Energy Workforce.
- Passage of the Housing is Infrastructure Act (H.R. 5187). The goal of infrastructure investment should be to build-back better than the original. Measures beyond H.R. 5187 may be needed to accomplish this goal.

Energy Storage

To support the contributions of the energy storage sector to the U.S. economic recovery and energy future, Congress should consider the following recommendations to:

- Fully authorize and fund the Grid Energy Storage Launchpad facility proposed to be constructed at the Pacific Northwest National Laboratory (PNNL).
 - This will assist with next-generation energy storage technology innovation and commercialization, in line with the objectives of the DOE Energy Storage Grand Challenge. The White House budget request seeks approximately \$50 million for this facility construction in FY2021; the Energy Storage Association (ESA) recommends a multi-year appropriation to the full expected funding requirement.
- Provide \$600 million in FY2021 in grants for distributed energy resources, including energy storage.
 - This should look for opportunities to include municipal infrastructure and microgrids.
- Direct the DOE to dedicate \$250 million to demonstration projects of energy storage across electric systems.
- Incorporate energy storage as an eligible investment for a renewed version of the DOE Energy Efficiency and Conservation Block Grant (EECBG) Program.
- Incorporate energy storage as an eligible investment for Department of Education programs that promote school construction and renovation.

Hydropower

The U.S. water power industry, comprising hydropower, pumped storage, conduit power and marine energy, has a tremendous impact on our nation's electric grid and economy. Hydropower delivers approximately 40% of U.S. renewable electricity, and hydropower pumped storage projects provide 93% of energy storage in the country.

However, the United States has significant underutilized water power resources, including non-powered dams, conduits, new pumped storage and marine energy. The advancement of new and innovative technologies, operations and approaches to harness these resources in a globally competitive marketplace is greatly enhanced by federal funding that augments RD&D efforts in the private sector.

A growing U.S. water power industry will support efforts to address climate change and assist in grid reliability and resiliency, while also advancing national economic goals and contributions to a low-carbon energy future.

Federal funding for RD&D is critical and will help create high-quality employment and support the thousands of businesses that make up the U.S. industrial supply chain. Examples of this critical funding include:

- Pass the Water Power Research and Development Act (H.R. 6084).
 - H.R. 6084 was introduced and reported out of the Subcommittee on Energy by voice vote in early 2020. This bipartisan bill establishes a comprehensive program of RD&D and commercial application activities for the hydropower, pumped storage and marine energy sectors. The bill authorizes close to \$650 million in funding over the next five fiscal years, and this could be expanded given current conditions. Research, analysis and technology development is needed to support grid optimization, inclusive of hybrid systems, storage and optimization of ancillary services.
- Fund operations and maintenance (O&M) upgrades at U.S. Army Corps of Engineers, Bureau of Reclamation and Tennessee Valley Authority hydropower projects to operate, maintain and upgrade existing hydropower projects, as well as to add non-federal hydropower development to their existing non-powered infrastructure.
- Expand, reauthorize and fund the Section 242 (oversubscribed at current authorization level) and Section 243 (authorized but never funded) Energy Policy Act of 2005 for hydropower programs. The Section 242 incentive is designed to bring down costs that can determine the viability of a given project, particularly for small hydropower projects. Due to the oversubscription of the incentive, the program should be fully funded at the \$10 million level.
- Increase funding for the DOE's Water Power Technologies Office (WPTO). The WPTO invests in technology RD&D for innovative standardized and modular approaches to hydropower development that can lower overall project costs and improve deployment time versus traditional projects at greenfield sites and non-powered dams.
 - The WPTO supports the DOE's Advanced Energy Storage Initiative and continues its focus on the roles of hydropower and pumped storage in grid reliability and resiliency by supporting innovative technologies and conducting new research to evaluate and improve the flexibility and grid services provided by hydropower and pumped storage.

- The WPTO also supports the development of innovative environmental mitigation technologies, such as novel fish passage designs and components, in addition to RD&D for early-stage wave, tidal and current technologies, ultimately leading to reduced costs and increased competitiveness of marine energy devices.

Natural Gas

Provide \$1 billion overall to DOE Fossil Energy Research and Development (R&D) programs.

Continued support of these programs will enable diversification of the uses of hydrocarbons in an efficient and environmentally sustainable way. The U.S. natural gas sector is an important part of the U.S. economy and of the global market for oil and gas.

- Provide \$20 million for the Supercritical Transformational Electric Power (STEP) program.
 - The funding would complete the necessary design and construction of the 10-megawatt pilot and testing for the facility. The recommendation provides additional funds for competitively awarded component R&D activities, coordinated with the Office of Nuclear Energy and the Office of Energy Efficiency and Renewable Energy, to advance the use of supercritical power cycles.
 - This is an ongoing effort at the DOE and was competitively awarded.
 - This project is "shovel-ready," with construction underway. Additional funding would complete the construction and testing, providing the nation with a valuable testing platform for the new supercritical carbon dioxide (sCO₂) power generation cycle.
- Provide \$100 million for a new Natural Gas Utilization R&D initiative to convert natural gas and other carbon feedstocks to higher-value cleaner fuels and chemicals, and to test these fuels on power applications and infrastructure.
 - Natural gas is an abundant and cost-effective natural resource that has had a tremendous environmental benefit. The recommendation is for a new initiative within the Office of Oil and Gas to utilize natural gas for purposes in addition to power generation and direct-use applications. The Natural Gas Utilization program would provide valuable research on converting abundant, low-cost natural gas and carbon-based feedstocks to low-carbon, higher-value products, including chemicals, liquids and hydrogen.
 - In addition, the funding should be made available for heavy-duty stationary power application deployment utilizing these cleaner fuels, as well as for testing and validation on existing fuel supply and storage infrastructure. A Natural Gas Utilization Center of Excellence should be established at the National Energy Technology Laboratory (NETL).
 - The initiative would provide diversification for oil and gas resources during an extraordinarily challenging period, as well as provide tremendous environmental benefits by utilizing our domestic resources in the form of cleaner fuels and chemicals.
 - Authority for converting fossil fuels to higher-value products was included in both the 2005 and 2007 Energy Bills. The National Energy Technology Laboratory began roadmap activities for this initiative but has not completed it. A focused initiative with Congressional direction would be extremely beneficial.

- Provide a \$10 million increase for Renewable Natural Gas R&D.
 - Renewable Natural Gas (RNG) is a low- to negative-carbon fuel that can be sourced from a variety of renewable pathways (e.g., biomass, digesters, landfills), but deployment has been limited due to cost, the availability of technologies that can be scaled up to meaningful production volumes, and concerns about the compatibility of existing transportation and distribution infrastructure. Congress should consider providing \$10 million to:
 - Perform R&D for technologies to advance the deployment of conversion processes to advance the supply of RNG to include the assessment of associated transportation and distribution infrastructure.
 - Enable RNG use across existing and planned natural gas transportation and infrastructure networks with particular emphasis on the infrastructure compatibility of the increased hydrogen content of biomass-derived RNG.
- Provide \$200 million for Natural Gas Carbon Capture and Sequestration.
- Provide \$100 million for the Unconventional Field Test Sites Program
- Provide \$100 million for Advanced Turbine R&D for natural gas and hydrogen turbines.
- Provide \$20 million for Emissions Mitigation R&D and Technology Deployment.

Solar Energy

Prior to the COVID-19 crisis, which has dramatically impacted the solar energy industry and slashed solar jobs, the industry was poised for exponential growth. The solar industry receives broad benefits from technology that the Department of Energy helps bring to market. This includes solar plus storage, which has achieved higher asset utilization, smart inverters for flexible power control, better communications and data analytics, and improved codes and standards. For example, federal research has helped the solar industry move toward improved inspection processes, which have been critical throughout the current crisis. Federal R&D has been essential to helping the solar industry create clean energy jobs in the future, which will be crucial in these difficult economic times.

A BCSE Board member, Solar Energy Industries Association (SEIA), will be sending a separate submission to the questionnaire in the coming days. SEIA is the national trade group for America's solar energy industries, representing approximately 250,000 Americans employed in a \$17 billion industry.

Sustainable Transportation

The transportation sector and auto industry are essential to a robust U.S. economy. Pursuing the following recommendations would help to build a more sustainable transportation future.

- Provide the Department of Transportation \$1 billion for electric vehicle charging and hydrogen fueling infrastructure, and the DOE \$100 million for a rebate program for electric vehicle and hydrogen vehicle supply equipment, with integrated energy storage as an eligible component, per Sec. 1401 of S. 2302 and Sec. 432 of the CLEAN Future Act, respectively.
- Increase funding for Advanced Vehicle and Fueling Infrastructure Deployment under the DOE's Clean Cities program.

- Include all four alternative fuels included in Section 1413 of the FAST Act – Electric Vehicles, Hydrogen, Natural Gas and Propane – in any expansion or update of the alternative fuel corridors program.
- Create an Advanced Technology Vehicles Manufacturing program for medium and heavy-duty vehicles (Section 13 of H.R. 5545).
- Create grants and loans for hydrogen, propane and natural gas fueling infrastructure build-out and for zero and low emission vehicles, through legislation such as S. 674 (or Section 1401 of S. 2302).
- Ensure that electric vehicle legislation does not exclude other emissions-reducing alternative fuels such as hydrogen, propane and natural gas.
- Increase funding for the DOE's Fuel Cell Technologies Office to focus on H2@Scale and Market Transformation/Technology Acceleration for advanced demonstrations.
- Fund electric transportation RD&D (Section 10 of H.R. 5545).
- Reauthorize the Diesel Emissions Reduction Act (DERA) (Section 32501 of H.R. 2741) and modify it to further focus on zero-emission vehicles and related infrastructure deployment.
- Create grants for utilities for electric bus (school and transit) mobile power source demonstration grants and for depot charging infrastructure build-out.

Wind Energy

Wind power represents the largest source of U.S. renewable energy capacity. Employing 120,000 individuals from across all 50 states, wind energy is combating climate change while benefiting the American workforce and economy. Congress should consider the following legislation to invest in critical R&D, bolster the wind energy workforce, address crucial infrastructure barriers and assist in the U.S. recovery from the COVID-19 epidemic.

- Pass the bipartisan, bicameral Wind Energy Research and Development Act of 2019. This legislation would authorize the DOE Wind Energy Technologies Office (WETO) and provide important policy direction.
 - The legislation would direct the DOE to conduct research that would generate technological efficiencies, optimize operations, improve grid integration, reduce costs and mitigate wildlife impacts, all of which are facilitators of sustained industry growth.
- Pass the bipartisan, bicameral Promoting Grid Storage Act of 2019. This legislation would improve the coordination of DOE energy storage research programs, fund DOE grants to help entities expand storage functions and provide grants to bring energy storage systems to market.
- Pass the bipartisan Wind Workforce Modernization and Training Act of 2019. This legislation would promote training opportunities for students, community colleges and technical schools; facilitate the modernization of the current U.S. wind technician workforce; and create career pathways for veterans.

- Pass the bipartisan, bicameral Offshore Wind Jobs and Opportunity Act. This legislation would establish an offshore wind career training grant program for community colleges, local governments and non-profit organizations, which would help the United States realize billions in revenue for U.S. supply chain businesses and equip U.S. workers with necessary skills for successful careers in offshore wind.

Further, Congress should consider opportunities to improve interregional transmission planning, understanding regional processes and conditions. This would unleash billions of dollars in investment and create thousands of jobs, which will put Americans back to work.

Support for Small Business in the Energy Sector

The economic impacts of COVID-19 on small businesses across America must continue to be a focus of economic recovery and stimulus assistance. More specifically, the BCSE calls for the following [regulatory relief measures](#), [program reforms](#) and [funding opportunities](#). These actions will help keep small businesses alive and open to assist in the rebuilding of the U.S. economy and of the clean energy economy in particular.

Regulatory Relief

- Provide no-cost extensions of existing grants that are suspended during the COVID-19 crisis.
- Temporarily reduce/waive cost-share requirements across various federal programs (particularly those that are currently around 50%).
- Encourage all federal RD&D agencies to streamline application requirements for federal grant programs, for instance via short-form initial rounds of application / letter of intent to assess eligibility.

Program Reforms

- Bolster and improve the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs.
- Make the Administrative Funding Pilot Program permanent.
- Allow Technical and Business Assistance funds to be spent in-house, rather than mandating one or more external vendors.
- Extend direct-to-Phase-II authority to all agencies and make it permanent.
- Make the Commercialization Readiness Pilot Program for Civilian Agencies and the Commercialization Assistance Pilot Program permanent.

Funding Opportunities

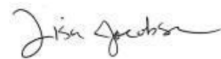
- Fund technical assistance centers or need-based grants to help small businesses navigate application procedures for federal RD&D grants, federal procurement opportunities and disaster aid.

- Provide increased support to the DOE and other RD&D agencies for prize competitions (such as American-Made Challenges), National Laboratory partnerships and similar strategies to provide swift support to rapidly scale up innovative ideas.
- Fund RD&D specifically to reduce the cost of municipal infrastructure that provides multiple essential services, including the generation of energy, managing pandemic waste and disaster debris, and providing essential local government services to residents.
- Increase funding for public-private partnerships such as National Laboratory incubators, small business vouchers to use National Laboratory facilities, technology testing centers, and similar federal infrastructure to help entrepreneurs develop and scale their innovations.
 - This could include reinstating federal support for coordination of the National Incubator Initiative for Clean Energy (NIICE) and competitively awarding funding to incubators, accelerators and similar ecosystem partners to develop or enhance programs to help entrepreneurs successfully commercialize their innovations.
- Explore grant or loan opportunities in the \$2-25 million range for pilot-stage R&D with early customers.
- Increase funding and decrease cost share for ARPA-E SCALEUP and extend this approach to Small Business Innovation Research and other grantees.
 - This could include creating loans that address the gap between Small Business Administration loans (which do not handle technology risk well) and DOE loans (which are \$50 million+ and generally apply to larger businesses) – a potential hybrid approach that offers forgivable loans if commercialization plans fall through.
- Provide funding through the DOE's Advanced Manufacturing Office to support regional manufacturing centers capable of assisting entrepreneurs with rapid-scale, iterative R&D to refine prototypes for prospective clients.
- Provide funding for workforce development programs along with scholarships/fellowships to keep STEM students in the pipeline through the economic crisis.

Next Steps and Areas for Discussion

BCSE members continue to refine this list of recommendations and would be pleased to meet with your staff via conference call or via an online meeting to further the ideas of the Council's coalition members. Please contact Ruth McCormick, Director, Federal and State Affairs at rmccormick@bcse.org or by telephone at 202-557-4002, if you would like to arrange a follow-up conversation.

Sincerely,



Lisa Jacobson
President, Business Council for Sustainable Energy

The CHAIRMAN. Thank you, Ms. Jacobson. We appreciate that.
Let's go now to Frank Macchiarola at API, the American Petroleum Institute. Welcome, Frank.

STATEMENT OF FRANK J. MACCHIAROLA, SENIOR VICE PRESIDENT, POLICY, ECONOMICS AND REGULATORY AFFAIRS, AMERICAN PETROLEUM INSTITUTE

Mr. MACCHIAROLA. Thank you. Chairman Murkowski, Ranking Member Manchin and members of the Committee, the subject of this hearing, Impacts of COVID-19 on the Energy Industry, is an important one and I thank you for the opportunity to testify today on behalf of the oil and gas industry.

The COVID-19 pandemic has fundamentally altered our way of life and our nation's economy. Each and every person and business has been impacted by the outbreak of the Coronavirus, and our industry is no different. The conditions created by COVID-19 present substantial business and operational challenges for the oil and gas industry, including an unprecedented market imbalance, significant commodity price declines and heightened efforts to maintain continuous operational integrity in the face of the pandemic. First and foremost, COVID-19 is a human crisis in the communities in which we work and live. In response to the pandemic, our industry donated more than \$100 million to relief efforts, including support for local food banks and hospital systems as well as supplies of personal protection equipment, medical gear, hand sanitizers and disinfectants to health care providers on the front lines of fighting this virus.

Across the United States, the oil and gas industry has stepped up during this challenging time. However, several factors came together to put an enormous strain on our workforce and, in fact, our overall energy security here in the United States. Some of these factors were the result of long-term trends while others were the result of changing conditions rapidly. At its core the commodity price decline we experienced was the result of an oversupplied market and, more importantly, a swift and steep decline in demand for oil. On the supply side, after ramping up to a record production level during a demand decline, Saudi Arabia, along with other OPEC+ nations, including Russia, finally agreed to reduce supply after pressure from the Administration and Congress.

By early June U.S. producers had responded significantly to market signals by lowering production by 2 million barrels per day from the highest levels of mid-March. While the supply response was helpful, it pales in comparison to the historic drop in demand. Global demand for April was estimated to be the lowest month of oil demand in nearly 20 years. While recent weeks indicate a rebalancing in the markets as economies open up and as demand returns, this downturn still continues to have an impact.

This unprecedented market disruption has created significant challenges for the oil and gas industry. As Chairman Murkowski noted in her opening statement, "American energy has suffered acutely and uniquely." But this crisis has not altered our values. Free markets and private enterprise serve as the foundation of America's oil and gas industry and, as such, we are not seeking in-

dustry-specific financial relief. In other words, we don't want a government bailout.

With respect to broader efforts, we supported the CARES Act which provided economic stabilization across the United States' economy to maintain systemic liquidity and to provide continued employment. On the operational side, we worked with government agencies to ensure continuity of operations by designating our workforce as essential and to provide regulatory flexibility for non-compliance. We also work to support EPA's fuel waivers under the Clean Air Act and to support the Energy Department's use of existing authorities to effectively manage the Strategic Petroleum Reserve. It's also important to note that we make clear what we're against. We discourage retaliatory trade measures that could further disrupt global markets, and we successfully opposed a petition before the Texas Railroad Commission to impose mandated supply constraints on oil producers.

As recent weeks have shown, the most effective way to address this market disruption is through economic stabilization and a safe and swift return to robust economic activity. While several unique factors during the COVID-19 pandemic created unprecedented conditions, our industry has experienced difficult times before. The resilience and innovative spirit that define America's oil and gas industry throughout our history remains alive and strong. We see it in the essential workforce that continues to deliver the energy and products that America needs to keep us moving forward. As America recovers, the oil and gas industry remains committed to providing our nation—and billions of people around the world—with the affordable, reliable and cleaner energy that will make better years to come.

Thank you for the opportunity to testify today and I look forward to your questions. Thank you.

[The prepared statement of Mr. Macchiarola follows:]



Statement of Frank J. Macchiarola
Senior Vice President, Policy, Economics and Regulatory Affairs
American Petroleum Institute
Washington, D.C.
U.S. Senate Committee on Energy and Natural Resources
"Impacts of COVID-19 on the Energy Industry"
Tuesday June 16, 2020

Introduction

Chairman Murkowski, Ranking Member Manchin and members of the Committee, thank you for the opportunity to testify today. My name is Frank Macchiarola, and I am senior vice president of Policy, Economics and Regulatory Affairs at the American Petroleum Institute (API).

API is the national trade association representing America's oil and natural gas industry. Our 600 members - from fully integrated oil and gas companies to independent companies - comprise all segments of the industry. API members are producers, refiners, suppliers, retailers, pipeline operators and marine transporters as well as service and supply companies providing much of our nation's energy.

The subject of today's hearing, "Impacts of COVID-19 on the Energy Industry" is an important one, as our nation faces a combined public health threat in the form of a pandemic, and a significant economic downturn.

To date, total COVID-19 cases in the United States stand at nearly two million, with total U.S. deaths surpassing 112,000.¹ And, our nation's employment statistics indicate a decline of approximately 20 million jobs since February.² Over the same time period, employment in the extractive industries, a category which includes: oil and gas, and support activities for mining, pipeline transportation, other related industries and some non-oil and gas sector jobs declined by 130,000 jobs.³

Oil and Natural Gas Industry During COVID-19

At the outset, it is important to briefly note some of the response efforts of the men and women of the oil and natural gas industry to address the COVID-19 pandemic. Our industry is helping provide much-needed relief and support to communities in a variety of ways. API members have

¹ "Coronavirus Disease 2019 (COVID-19): Cases in the U.S. Last updated June 10, 2020. Centers for Disease Control and Prevention, <https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/cases-in-us.html>.

² "The Economics Daily: Employment up 2.3 million in May, but still down 19.6 million since February. June 9, 2020. U.S. Bureau of Labor of Statistics, <https://www.bls.gov/opub/ted/2020/employment-up-2-point-5-million-in-may-2020-but-still-down-19-point-6-million-since-february.htm>

³ US Bureau of Labor Statistics, Current Employment Statistics, <https://www.bls.gov/ces/>



donated more than \$100 million to relief efforts, including support to local food banks, hospital systems and many non-profit organizations. Additionally, to assist health-care professionals and first responders on the frontlines battling this pandemic, the oil and natural gas industry provided gasoline cards, vouchers and discounts on fuels. And, the oil and natural gas industry supplied personal protective equipment and medical gear to hospitals, nursing homes and health-care providers to help protect against the spread of the coronavirus.⁴ Additionally, our industry produces critical raw materials such as polypropylene, used to produce masks and gowns, and isopropyl alcohol for hand sanitizers and disinfectant products.⁵ Across the country, our industry continues to provide the energy and products the nation needs during this time of crisis.

The conditions created by COVID-19 present substantial business and operational challenges for the oil and natural gas industry including an unprecedented market imbalance, a significant commodity price decline and heightened efforts to maintain strong operational integrity in the face of the pandemic. While the recent lifting of stay-at-home policies designed to prevent the spread of the coronavirus has resulted in increased petroleum demand and a stabilization in the markets, difficulties persist. In particular, uncertainty remains as to the speed and scope of the recovery in transportation and thus the outlook for jet fuel and gasoline demand. We remain confident that economic recovery and oil demand are inextricably linked, and we see signs of recovery and demand increases continuing into the second half of 2020. Our industry remains resilient in the face of these challenges and we are committed to providing the affordable, reliable and cleaner energy that people need to sustain everyday life, enhance standards of living and increase prosperity around the world.

A strong U.S. oil and natural gas industry is essential to maintaining our nation's economic vitality. Over the past decade, the emergence of the United States as the world's leading producer of oil and natural gas has strengthened our energy security and driven economic growth while reducing emissions. The oil and natural gas industry supports more than ten million American jobs and over seven percent of the overall U.S. economy.⁶ Since 2010, cumulative capital investment in the industry exceeded two trillion dollars⁷ and the average annual salary of oil and natural gas workers is approximately \$108,000 – nearly double the national private sector average.⁸ Additionally, as economies around the world expand, global consumption of oil and natural gas will continue to grow. Over the next thirty years, the world's population is estimated to grow by approximately two billion people.⁹ With greater global economic expansion and an increase in the size of middle class populations, world energy usage is estimated to increase by nearly fifty percent by 2050, with more than half of that demand coming from oil and natural gas.¹⁰ As the world

⁴ API, <https://www.api.org/news-policy-and-issues/pandemic-information/industry-response>, June 2020.

⁵ ExxonMobil, "A Message from Darren Woods" <https://corporate.exxonmobil.com/News/COVID-19-ExxonMobils-response/message-from-Darren-Woods>

⁶ PWC "Impacts of the Natural Gas, Oil and Petrochemical Industry on the U.S. Economy in 2018" May 2020.

⁷ Oil and Gas Journal.

⁸ U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages.

⁹ United Nations: Department of Economic and Social Affairs. June 17, 2019. <https://www.un.org/development/desa/en/news/population/world-population-prospects-2019.html>

¹⁰ U.S. Energy Information Administration, "International Energy Outlook 2019 with projections to 2050" September 24, 2019 <https://www.eia.gov/outlooks/ieo/pdf/ieo2019.pdf>



recovers from the COVID-19 pandemic and its associated economic impacts, the oil and natural gas industry will be essential to that recovery and we stand ready to do our part.

Market Impacts of COVID-19

In assessing the market impacts of COVID-19, it is first important to recognize that several unique supply and demand factors coincided to create an historic market decline. Some of these factors were the result of long-term trends while others served to change market conditions rapidly. At its core, the sharp commodity price decline was the result of an oversupplied market and a swift, steep decrease in demand for petroleum products.

With respect to the supply side of the equation, for over three years the OPEC-plus alliance had agreed to crude oil production cuts as output from the United States increased significantly during that same time period.¹¹ Non-compliance from some alliance countries during that time frame, including Russia, were a precursor for the events that took place in early March of this year. In the midst of a drastic reduction in global oil demand from the COVID-19 outbreak, OPEC-plus nations met in Vienna, Austria, on March 5, 2020.¹²

At the Vienna meeting, Russia declined to approve OPEC's proposal to cut production by an additional 1.5 million barrels per day (applied on a pro-rata basis with OPEC members reducing one million barrels per day and non-OPEC nations the other five hundred thousand barrels per day), in addition to the 1.7 million barrels per day reduction agreed upon in December of 2019.¹³ Saudi Arabia responded immediately by discounting prices and announcing production increases sending the price of oil on a steep decline of around 60 percent for the first quarter of 2020 and pushing oil to a 21-year low during April.¹⁴

In an effort to increase its market share in the midst of the pandemic, Saudi Arabia produced a record 11.3 million barrels of oil per day in April, a month which also saw a record decline in global oil demand.¹⁵ Finally, weeks after the early March actions in Vienna, and with pressure from the Trump Administration and Congress, OPEC-plus nations agreed to production cuts of 9.7

¹¹ Tom DiChristopher, Sam Meredith, "OPEC and allies agree to cut oil production by 1.2 million barrels per day" CNBC.com, December 7, 2018.

<https://www.cnbc.com/2018/12/07/opec-meeting-saudi-arabia-and-russia-look-to-impose-production-cuts.html>

¹² Organization of Petroleum Exporting Countries, *The 178th (Extraordinary) Meeting of the Conference of the Organization of the Petroleum Exporting Countries (OPEC)* Vienna, Austria, March 5, 2020.

https://www.opec.org/opec_web/en/press_room/5865.htm

¹³ Sam Meredith, "OPEC+ fails to agree on massive supply cut, sending crude prices to 2017 lows" CNBC.com <https://www.cnbc.com/2020/03/06/opec-meeting-coronavirus-weighs-on-oil-demand-as-oil-prices-fall.html> March 6, 2020.

¹⁴ William Watt, "What's Next for Oil after Prices go Negative? Saudi, other prices expected to do more to curb supply" MarketWatch <https://www.marketwatch.com/story/whats-next-for-oil-after-prices-go-negative-saudis-other-producers-expected-to-do-more-to-curb-supply-2020-04-21> April 21, 2020.

¹⁵ Organization of the Petroleum Exporting Countries "OPEC Monthly Oil Market Report" May 13, 2020 (56).



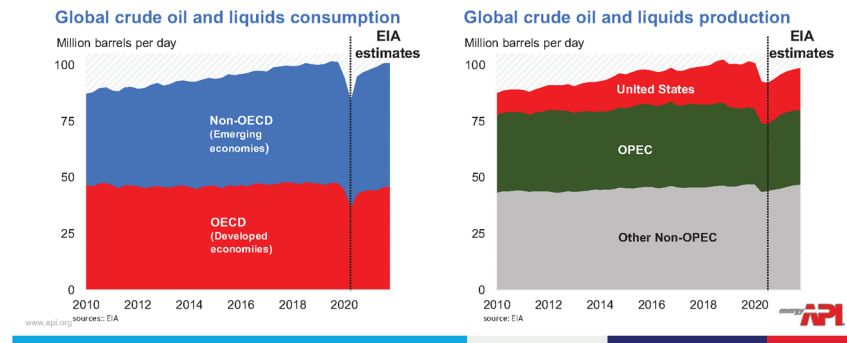
million barrels per day taking effect on May 1. On Saturday June 6, OPEC-plus agreed to extend these oil production cuts through the end of July.¹⁶

In the United States, crude oil production has responded to market signals during the past three months. In the week ending June 5, U.S. crude oil production was 11.1 million barrels per day, a decrease of 1.9 million barrels per day from the last week of March.¹⁷

The data also shows that the supply side was the much smaller piece of the equation. While the supply response is helpful – it has lagged – and still pales in comparison to the steep and swift demand declines for oil. On the demand side, U.S. oil demand was 17.6 million barrels per day in the week ended June 5, an increase of 3.8 million barrels per day over the low point in the week of April 10, but still well below the pace of 20.2 million barrels per day throughout 2019, according to the Energy Information Administration (EIA).¹⁸

Global oil demand fell faster than supply, and EIA expects relatively faster demand recovery after Q2 2020

• EIA projects U.S. production to decline, offset by other Non-OPEC nations and OPEC to global markets



Globally, the dynamic of a more rapid and substantial demand response has also prevailed. EIA currently projects 2020 oil demand will decline by 8.3 million barrels per day as a result of global

¹⁶ Benoit Faucon, Summer Said, David Hodari. "OPEC, Allies Finalize Deal to Extend Oil-Output Cuts" The Wall Street Journal. <https://www.wsj.com/articles/opec-finalizes-deal-to-extend-oil-output-cuts-11591456992>. June 6, 2020.

¹⁷ Energy Information Administration "EIA Weekly Petroleum Status Report" (June 10, 2020).

¹⁸ Id.



containment measures around COVID-19.¹⁹ Oil demand in April, which is widely expected to be the lowest point, was estimated by EIA at 21.3 million barrels per day lower than a year ago – down to the lowest level since 2002.²⁰ However, EIA also projects a relatively more rapid recovery for demand than supply, which underscores the importance of an energy policy in the United States that allows markets to work and thus helps enable U.S. producers to ramp back up as the economic recovery progresses.

Government and Public Policy Response

From the outset of the COVID-19 pandemic, it was essential that the oil and natural gas industry continue to supply the nation with fuel without interruption to our operations and supply chains. On March 20, 2020, API President and CEO Mike Sommers wrote to President Donald Trump and the nation's governors, highlighting the critical role our industry plays in providing affordable and reliable energy to American families and businesses.²¹ As federal and state restrictions and guidelines took effect to prevent the spread of the coronavirus, API requested that the Administration work with states to ensure they recognized the industry's essential role in providing the necessary fuels to deliver products and services in a timely fashion across the country. API encouraged states to follow U.S. Department of Homeland Security guidance designating oil and gas industry workers as essential critical infrastructure workforce,²² promoting the ability of such workers to continue operations to the fullest extent possible during periods of social distancing and closure orders and directives. Our industry appreciates the support received at the federal, state and local levels to ensure continuity of operations and workforce during this critical time.

Additionally, during the week of March 23, API wrote to several relevant federal departments and agencies expressing our industry's commitment to prioritizing safe and reliable operations and requesting assistance in temporarily waiving non-essential regulatory compliance obligations in coordination with state agency counterparts as necessary.²³ Recognizing the potential for limited personnel capacity as a result of social distance guidance from Centers for Disease Control and Prevention and state stay-at-home orders, our industry requested temporary relief through enforcement discretion, waivers or revised compliance timeframes in response to the COVID-19 pandemic. Our industry appreciates the guidance received at the federal and state levels related to such requests.

¹⁹ Energy Information Administration. "EIA: Short-Term Energy Outlook" <https://www.eia.gov/outlooks/steo/report/> (June 9, 2020).

²⁰ Id.

²¹ Letter, Michael J. Sommers, API to President Donald J. Trump, March 20, 2020. <https://www.api.org/-/media/Files/News/Letters-Comments/2020/3202020-API-Letter-to-President-Trump.pdf>

²² Christopher C. Krebs, "Memorandum on Identification of Essential Critical Infrastructure Workers During COVID-19 Response" (official memorandum), Washington D.C. United States Department of Homeland Security, March 19, 2020. <https://www.cisa.gov/sites/default/files/publications/CISA-Guidance-on-Essential-Critical-Infrastructure-Workers-1-20-508c.pdf>

²³ Letter, Frank J. Macchiarola, API to U.S. Environmental Protection Agency Administrator Andrew Wheeler, March 23, 2020. <https://www.api.org/-/media/Files/news/2020/03/Letter-to-Admin-Wheeler-3-23-20.pdf>



With respect to policy, API has been clear from the outset of this historic crisis that we are not seeking industry-specific financial assistance or legislative authorizations as a result of the market disruption caused by the COVID-19 pandemic. We support Congressional action through the CARES Act in providing broad economic stabilization across the U.S. economy in the form of measures to maintain systemic liquidity and promote continued employment.²⁴ And, we support efforts at the U.S. Department of the Treasury and the Federal Reserve to ensure systemic liquidity across the economy.

As the steep drop in oil demand continued and concerns grew regarding the availability of adequate commercial oil and petroleum product storage capacity, the U.S. Department of Energy (DOE) cancelled plans to sell oil into the market from the Strategic Petroleum Reserve (SPR). On April 2, 2020, DOE announced plans, under existing legal authority, for a solicitation to make available up to 30 million barrels of SPR oil storage capacity.²⁵ DOE ultimately leased 23 million barrels of oil storage capacity in the SPR, with 15 million barrels already delivered, helping to alleviate the domestic market imbalance.²⁶ API continues to support the Administration's use of existing authorities to effectively manage the SPR.

On March 27, 2020, the U.S. Environmental Protection Agency (EPA), in consultation with DOE, issued a waiver of certain fuel standards under the Clean Air Act to "minimize or prevent the disruption" of an adequate supply of gasoline throughout the United States, delaying the transition to summer gasoline at fuel distribution terminals on May 1 and at retail stations on June 1.²⁷ EPA allowed terminals and retailers to distribute fuel covered by the waiver until supplies were depleted. Additionally, forty-four states responded in-kind, issuing waivers to help alleviate this potential disruption to fuels markets. API supports these efforts to minimize or prevent disruptions in fuels markets across the nation.

Finally, there were several policies proposed by some during the market disruption that API strongly opposes. While the dramatic decrease in global crude oil demand and accompanying market contraction is significantly concerning, we do not support specifically targeted federal relief measures in energy markets. The value of free markets and private enterprise serve as the foundation of our industry and as such we are not seeking industry-specific financial relief. While conditions of oversupply impacted global markets, the market disruption created by COVID-19 is principally driven by broader economic contraction and significantly reduced demand for petroleum-based products. Further, we believe that short-term measures, though well-intentioned, are likely to be ineffective and may produce longer-term systemic harm. As recent weeks have

²⁴ Coronavirus Aid, Relief, and Economic Security (CARES) Act of 2020, Pub. L. No. 116-136 (2020).

²⁵ U.S. Department of Energy, <https://www.energy.gov/articles/us-department-energy-make-strategic-petroleum-reserve-storage-capacity-available-struggling> (April 2, 2020).

²⁶ U.S. Department of Energy, <https://www.energy.gov/articles/doe-announces-crude-oil-storage-contracts-help-alleviate-us-oil-industry-storage-crunch> (April 14, 2020).

²⁷ Letter, U.S. Environmental Protection Agency Administrator Andrew Wheeler to Governors and Mayor Bowser, May 1, 2020 Fuel Waiver Concerning Summer Gasoline, <https://www.epa.gov/sites/production/files/2020-03/documents/nationwidefuelwaiverconcerningsummergasoline.pdf> (May 27, 2020).



shown, the most effective way to address this market disruption is through economic stabilization and a safe and swift return to economic activity.

In keeping with our free market-based principles, we discourage retaliatory trade measures that could disrupt global markets. In addition to substantial global interests within the U.S. oil and natural gas industry, U.S. refiners require diverse crude slates, including from imports, to deliver essential petroleum products to American consumers. Additionally, U.S. producers avail themselves of international markets to meet global energy demand. It is essential that we sustain these markets, particularly during this disruptive time. On April 1, 2020, API President and CEO Mike Sommers and AFPM President and CEO Chet Thompson wrote to President Donald Trump noting the importance of the refining sector to the broader U.S. economy and cautioning against policies that would impose supply constraints, such as quotas, tariffs, or bans on foreign crude that would exacerbate this difficult situation and jeopardize American competitiveness.²⁸ The oil and natural gas industry appreciated the Administration's opposition to such measures.

Additionally, API successfully opposed petitions to impose production quotas on oil producers in Texas, Oklahoma and North Dakota demonstrating that market forces were already in motion to resolve supply and demand imbalances.²⁹ By its nature, supply tends to respond slower than demand, but the U.S. still experienced an unprecedented supply response in the form of lower drilling activity and oil production. For the week ending June 5, EIA data showed that U.S. oil production fell by two million barrels per day from its peak in mid-March.³⁰ Government intervention, which spreads the proverbial pain in different ways than competitive markets, would be counterproductive and disproportionately harm efficient producers – potentially hindering future productivity and our ability to ramp back up to meet global oil demand as economic recovery takes hold.

Conclusion

The conditions created by the COVID-19 pandemic present significant business and operational challenges for the oil and natural gas industry. A public health crisis and an accompanying global economic contraction resulted in a major disruption in oil markets. During a period of oversupply, our industry suffered a substantial reduction in oil demand that was both swift and steep and caused a significant commodity price decline.

While several unique factors coincided to create these unprecedented conditions, our industry has experienced difficult times before. The resilience and innovative spirit that defined America's oil and natural gas industry throughout its history remains alive and strong in the essential workforce that continues to deliver the energy and products Americans need to keep us moving forward through this crisis.

²⁸ Letter from Michael J. Sommers, API and Chet Thompson, AFPM to President Donald J. Trump, April 1, 2020. <https://www.afpm.org/system/files/attachments/Joint-AFPM-API%20letter-to-President-Trump-04-01-2020.pdf>

²⁹ Testimony of R. Dean Foreman, API before the Railroad Commission of Texas <https://www.rrc.state.tx.us/media/57237/cmts-recvd-apr14-conf-api.pdf> (April 8, 2020)

³⁰ Energy Information Administration "EIA Weekly Petroleum Status Report" (June 10, 2020).



Our priority remains the safety and health of our workers and the communities in which we work and live. As our nation recovers from this public health crisis and economic downturn, the oil and natural gas industry is committed to providing our nation – and billions of people around the world – with more affordable, reliable and cleaner energy for better years to come.

Thank you for the opportunity to testify today, and I look forward to your questions.

The CHAIRMAN. Thank you, Mr. Macchiarola.

Ms. Roberts, welcome to the Committee. We appreciate your comments this morning.

STATEMENT OF JACKIE ROBERTS, WEST VIRGINIA CONSUMER ADVOCATE, AND PRESIDENT, NATIONAL ASSOCIATION OF STATE UTILITY CONSUMER ADVOCATES

Ms. ROBERTS. Thank you. Chairman Murkowski, Ranking Member Manchin, distinguished members of this Committee, I'm Jackie Roberts. I'm the Consumer Advocate for West Virginia and President of the National Association of State Utility Consumer Advocates. Consumer Advocates represent the interests of utility customers in state proceedings, federal proceedings before the FCC and in state and federal courts. We are obliged by law to do so.

There are a couple takeaways, I think, that are important to note today. The first is that utilities are essential services. Without utilities we don't have homes or apartments to live in and that includes not only electricity, gas, telecommunications, but water. LIHEAP, increase in LIHEAP funding has been very helpful but it's not just help for the low income that is necessary for consumers. With about 160 million people in this country that live paycheck to paycheck, we're seeing many consumers that have never missed a utility payment that now can't. I understand that the relief packages provided to citizens were to help in this gap between being unable to work and returning to work, but unfortunately, the timing of residents and customers receiving this aid has caused many not to be able to pay their utility bills, their rent or their mortgages. As a result, there are increased revenue shortfalls for utilities which, that harm not only the utilities but harm the customers that eventually must pay those bills. We need to have data-based, evidenced-based solutions in working with utilities and customers to get through this time of economic strain.

The second takeaway that I think is so important is that the return to work does not mean that we have achieved economic recovery. There is a lag between when people return to work, how they return to work, whether they return to work and when utility moratoria for shutoffs should end. We're not there yet, and I don't think we're going to be at a point anytime soon where the moratoria should end. Each state knows its utilities and knows its customers well. We appreciate Congress not issuing national moratoria for utilities. Consumers advocates do this work every day, negotiating between customers and utilities. We know how to do this, and we believe that state-based moratoria are the best way to handle the customers' and the utilities' needs.

LIHEAP, as I said, is important and the increases in LIHEAP are essential to low income customers and the lifting on some of the caps for LIHEAP are important, but we also need help for customers that are just out of work and have no money. Direct support to utilities for these customers is something that could be considered. Utilities also suffer from lost revenues from not receiving the payments from customers. For some utilities this is a, this presents a liquidity problem where they just don't have sufficient revenue to operate their businesses. This is most likely to occur, not for the investor-owned utilities but for public power and co-ops where the

customers actually own the utility. Relief for those types of utilities is going to be important and we need evidence-based, data-based solutions for providing that relief, and they will vary from state to state and utility to utility.

Broadband is also essential for customers, especially in this time of telecommuting and medical telecommuting. It's essential that we have broadband service. The digital divide in many states, West Virginia is one, is real and severe. Many of our residents have no access whatsoever to broadband and that is a problem that will affect the recovery of the economy.

Tax normalization resulting from funds, customer funds, held by utilities could be a solution to help bridge the economic gap between customers and utilities. Excess deferred income tax credits from the Tax Cuts and Jobs Act must be returned under normalization, tax normalization, rules at a certain rate. So going forward there are hundreds of millions, if not billions of dollars the utilities are holding that are undeniably customer money. Access to that customer money might be a way to help bridge the gap between a customer's inability to pay and the utility's need for revenues.

I thank you for considering customers and realizing the importance of utilities. One other thing I'd like to say in closing is that water utilities do not receive any LIHEAP funding and if you think electricity is essential, water is particularly essential, especially in this time of a health crisis. So thank you for the opportunity to testify, and I look forward to answering your questions.

[The prepared statement of Ms. Roberts follows:]

**Jackie Roberts, West Virginia Consumer Advocate
President, National Association of State Utility Consumer Advocates (NASUCA)**

**UNITED STATES SENATE
COMMITTEE ON
ENERGY AND NATURAL RESOURCES**

June 16, 2020

TESTIMONY

Chairman Murkowski, Ranking Member Manchin and distinguished members of the Committee, my name is Jackie Roberts, and I appreciate the opportunity to address the Committee not only as the West Virginia Consumer Advocate, but also as President of the National Association of State Utility Consumer Advocates (NASUCA). Today I will share what NASUCA is doing to support its state consumer advocates during the COVID-19 public health and economic crisis, while reiterating suggested policy priorities identified in a letter to Congress dated May 22, 2020 (attached). I will also tell you about the types of challenges that utility consumers currently face and how a considered balance between utility industry regulation and consumer protection is and will be necessary, to mitigate further upheaval within our country. It is my hope that this testimony paints an accurate picture of the urgency and magnitude of the current crisis for many utility consumers.

If I could give you two key take aways today, they are that: one, affordable access to electricity, natural gas, clean water and wastewater and communication services are essential for modern life; and two, that economic recovery of utility customers lags significantly behind the opening of the economy. For many, the economic and unemployment crisis will continue far beyond the near term. Congress has an important role to play in providing the support that families, children, the elderly and other at-risk consumers will need to afford and maintain these essential utility services. Ultimately, choosing to help keep people in their homes will help avoid the potential for a much greater health and economic crisis.

NASUCA is a voluntary association consisting of 58 state utility consumer advocate offices. Its members represent the interests of utility consumers in 44 states, the District of Columbia, Puerto Rico, Barbados and Jamaica. NASUCA's members are either designated by the laws of their respective jurisdictions to represent the interests of utility consumers before state and federal utility regulators and in the court, or are recognized utility consumer advocates in these jurisdictions. We protect customers, especially residential customers, in all utility matters.

During this unprecedented time, NASUCA has focused its attention on providing a platform for members to share timely information regarding the impact of COVID-19 on utility consumers. We created a COVID-19 Response Subcommittee as a platform for members to identify current challenges, discuss potential solutions and create policy recommendations. Through this subcommittee, NASUCA passed Resolution 2020-01 "*NASUCA Recommendations Concerning the Effects of the Public Health and Economic Crises Resulting from COVID-19*"

upon Utility Rates and Services Provided to Consumers by Public Utilities,” which is attached to this testimony, for your convenience.

Who Are We Helping?

We are helping utility customers, predominately residential utility customers who have been devastated by the loss in April, alone, of 20.5 million jobs. The country’s jobless rate rose to 14.7 %.¹ It is evident that this economic uncertainty has the potential to remain with us in the long-term, and we must plan accordingly.

In 2018, approximately 38.1 million people lived in poverty.² But we must recognize that this number has and will increase as the country grapples with the economic aftermath of COVID-19. These circumstances are debilitating for many customers.

West Virginia is a good example of how vulnerable utility customers are: of 1.8 million residents, we had the fourth highest poverty rate nationally; our median age is well above the national average; we have the second highest percentage of residents over 65; twenty-five percent of our children live at the poverty level and over 50% are below the self sufficiency standard, meaning they receive some form of assistance. Residents of West Virginia – and in all of this country – must now emerge from a pandemic and try to keep their homes and utility service.

What We Would Like to See Happen?

Utility customers must be given real opportunities to retain utility services while recovering economically. Based on Resolution 2020-01, NASUCA sent Congress a letter on May 22, 2020 which identified several areas where we believe Congress can take an active role, providing relief for utility consumers. At this time, NASUCA encourages Congress to allow regulators, industry, and consumer advocates to work collaboratively and assemble evidence-based solutions, providing relief for utility consumers, while balancing the needs of the utility industry. I’d like to highlight a few key themes of that letter, and our resolutions.

First, each state and each utility face different circumstances and challenges. Congress should look for ways to provide support for customers (LIHEAP or other direct support) and support for utilities (infrastructure programs to create jobs or other direct support). These types of support set the stage to allow each state to work constructively with its utilities to find the best approach to keep utility consumers connected to service.

Second, Congress can enhance funding levels for the Low-Income Home Energy Assistance Program (LIHEAP). Additional LIHEAP support helps customers reduce arrearages and get current on utility bills, while also providing much needed revenue to support utility operations. A similar type of LIHEAP assistance program should be created for water and wastewater customers. If you are struggling to pay your electricity bill, you are likely struggling to pay your water bill. And yet there is no assistance program for water and wastewater customers.

Third, beyond indirect support like LIHEAP, some utilities may need direct support. The utilities’ needs will depend on their corporate structure and capitalization. Smaller public systems and coops will be harder hit than large publicly owned utilities. Ultimately, we help all consumers if we close the gap between prudently incurred and recoverable utility costs and the reduced revenue levels that many utilities may be experiencing. That gap is what will force

¹ <https://www.bls.gov/news.release/laus.nr0.htm>

² <https://www.census.gov/library/publications/2019/demo/p60-266.html>

utilities to request rate increases at the state level. Utility rate increases at this time only serve to deepen the challenges for consumers and the economy in the future.

Fourth, the COVID-19 crisis has made it clear the importance of our broadband communication networks to support commerce, telemedicine, government, education and public safety services. Congress must work with states and support programs that expand broadband capacity and availability in all areas. We must reduce the digital divide which has been exacerbated during this pandemic. Congress should also work with the Federal Communication Commission to expand access to the Lifeline program, which helps low income customers have access to these essential services.

Finally, Congress should eliminate the tax normalization rules for excess accumulated deferred income tax balances on the utility books due to the corporate tax reductions in the 2017 Tax Cut and Jobs Act. I won't venture into the details, but utilities have billions of dollars of consumer supplied money on their books that, absent the normalization rules, could be returned to consumers to address this crisis.

Personal Example?

As we look at our neighbors, friends and families struggle amidst the pandemic, I would like to tell you about someone in Charleston who was recently allowed to return to work in a salon. She was out of work for about 2 ½ months. Upon the strategic opening of the state, she returned to work, but was limited in her earning potential due to limited hours at the salon, required by social distancing mandates. These circumstances stifled her normal earning potential, and thus her ability to pay for basic necessities such as rent, food, and utilities. Although she is working part-time, she must recover from being out of work entirely and currently at reduced wages. She is an example of why reopening the economy is does not mean customers are suddenly able to resume normal utility payments.

Interestingly, to give a broader understanding, she is one of more than 160 million people in the United States, who have already been living paycheck to paycheck.³ Coupling this, with an economic recession, and a global health crisis, requires all of us to come together and make sound evidence-based solutions to help utility customers come up with ways to prevent them from not only losing the ability to prevent disconnections of electricity, water, and other necessary utilities, but ultimately, their homes.

I fear some utilities equate strategic opening of business as one indicia that they should resume the usual customer disconnections. This belief is misguided, and customers must be allowed to economically recover while their essential services remain intact. This will certainly take more than a few months.

At this time, I thank you for your consideration and welcome the opportunity to answer any questions you may have.

³ <https://content.schwab.com/web/retail/public/about-schwab/Charles-Schwab-2019-Modern-Wealth-Survey-findings-0519-9JBP.pdf>

**NATIONAL ASSOCIATION OF STATE UTILITY CONSUMER ADVOCATES
Resolution 2020-01**

NASUCA Recommendations Concerning the Effects of the Public Health and Economic Crises Resulting from COVID-19 upon Utility Rates and Services Provided to Consumers by Public Utilities

Whereas, on January 30, 2020 the World Health Organization (WHO) declared the novel coronavirus outbreak (COVID-19) a Public Health Emergency of International Concern (PHEIC)ⁱ. By March 11, 2020 the WHO characterized COVID-19 as a world pandemic; and

Whereas, on January 31, 2020 the Secretary of the United State Department of Health and Human Services declared a public health emergency related to the COVID-19ⁱⁱ. On March 13, 2020 the President of United States declared that the COVID-19 outbreak in the United States constituted a national emergencyⁱⁱⁱ; and

Whereas, during this national emergency, extraordinary actions have been instituted by State Governors and the federal government to reduce social contact with the goal of preventing the spread of the COVID-19 virus. Many businesses have been declared non-essential during the crisis and temporarily closed. Many states have issued temporary orders for citizens to shelter-in-place and avoid all non-essential movement away from home. Schools have been closed in many states. These emergency actions have resulted in record unemployment, widespread financial hardship and severe contraction of state economies; and

Whereas, to reduce the economic impact of this national emergency the United States Congress has passed, and the President has signed, several laws that offer financial support for states, citizens and businesses, some of which specifically include funding for essential utility services; and

Whereas, State governors and state public utility commissions and consumer advocates have taken steps to order or request voluntary compliance, and utilities and communications providers have taken steps either voluntarily or pursuant to orders, to stop disconnecting consumers that are unable to pay for service during the national emergency, to reconnect service for consumers that were disconnected prior to the national emergency, and to cease other collection activity temporarily; and

Whereas, the national crisis caused by COVID-19 is extraordinary in its breadth and depth, and the speed of its onset. While the ultimate depth and duration of the economic crisis is unknown, the initial impact of the economic crisis has been severe, resulting in closed businesses, disruption to the economy and millions unemployed,^{iv} many of whom are struggling to meet basic needs such as buying food and medicine, paying for shelter and paying for vital utilities; and

Whereas, the end of the COVID-19 virus public health emergency, however defined, will not correspond to the end of the economic crisis. Many utility consumers are already behind on, or will fall behind on their utility bills, and will need uniform programmatic assistance and financial

help getting back on their feet. This includes payment arrangements covering much longer time periods than normal, discount/assistance plans where none currently exist or expansion of existing plans; and

Whereas, access to electricity, water, natural gas and communications networks are essential for the health, safety, and welfare of all people, and that particularly during this unparalleled crisis broadband communications has played a vital role in protecting and furthering the health, safety and welfare of the States and their peoples; and

Whereas, small water and wastewater utilities have unique liquidity and infrastructure needs that must be addressed. Due to the lack of population density and the lack of economies of scale, small communities often face hurdles in supporting water and wastewater systems. Urban and rural water systems may also have issues with lead and other contaminants, and face other infrastructure challenges; and

Whereas, one of the goals of regulation besides protecting consumers is to serve as a proxy for the positive results of competition, and competitive enterprises have sought or will seek to reduce costs during this economic crisis.

Now, Therefore, Be It Resolved: Every effort must be made to ensure that universal access to and affordability of utility services are not diminished during this public health and economic crisis. Utilities, regulators and consumer advocates should work together to craft evidence-based solutions that address the unique challenges and burdens faced by all consumers and other stakeholders during this crisis. Such solutions should ensure the continued safe and adequate provision of utility services at affordable rates and under terms and conditions that are reasonable within this new environment; and

Be it further resolved, that: When utilities, states or consumer advocates are communicating with consumers during this crisis, effort should be made to focus on the following:

- Consumers who are having trouble paying their utility bills should be urged to communicate with their utilities early and frequently;
- States, utilities and other service agencies should work together to communicate with utility consumers to ensure access to low income bill payment assistance, weatherization or other energy efficiency programs and any other resources available to help consumers pay arrearages, reduce bills and maintain service;
- Utility consumers should be urged to continue to pay their utility bills if possible, and if they cannot pay in full, to pay some portion of the bill to minimize any balance that will accumulate and be due at a later date; and

Be it further resolved, that: With regard to disconnection moratoria and communication rules between utilities and consumers during this crisis:

- Congress should respect state jurisdictional and decision-making authority to determine the extent and duration of any shutoff moratoria and to control any rules related to disconnections and reconnections, utility communications, payment programs and revenue collection activities;

- State public utility commissions should revisit utility tariffs and other terms and conditions applicable to disconnections, reconnections, late payment penalties and deposits in proceedings to address the economic impacts upon consumers of the ongoing economic crisis and to adopt policies applicable after the crisis ends to protect continued access to vital utility services by providing more time for repayment of past due amounts and reducing the burden of collection-related charges on consumers;
- Utilities should track and publish detailed information about consumer arrearages and shutoffs in a standardized format,^v while maintaining consumer privacy. Such information should be shared with state commissions and consumer advocates and be publicly available; and

Be it further resolved, that: To help consumers pay utility bills during this crisis, NASUCA believes:

- Congress should provide supplemental funding for fiscal year 2020 and increase funding for subsequent fiscal years through the Low-Income Home Energy Assistance Programs (LIHEAP) and other funding mechanisms to address heating and cooling bills for consumers impacted by the COVID-19 crisis;
- Congress should create and fund a LIHEAP type mechanism to assist low-income water and wastewater utility consumers in paying their bills;
- Congress should consider providing direct support to utilities to assist consumers that may not otherwise qualify for LIHEAP assistance, including providing direct funding to utilities to reduce consumer arrearages and provide bill credits to help consumers maintain service;
- States should review and relax LIHEAP income eligibility standards to allow a wider range of consumers to qualify for assistance;
- States should consider adopting or strengthening bill payment assistance programs such as discounted rates, Percentage of Income Payment Plans (PIPPs) and arrearage management or arrearage reduction programs; and

Be it further resolved that: Accounting and utility operating cost:

- State commissions are urged to identify cost reductions when evaluating utility requests to defer COVID-19 cost increases as a regulatory asset;
- Congress should eliminate the normalization requirement contained in the Tax Cuts and Jobs Act of 2017 associated with the flowback of excess protected accumulated deferred income taxes to allow state commissions more flexibility to use these consumer-supplied funds to offset expenses; and

Be it further resolved, that: Broadband, telephone and cable:

- To facilitate the additional capacity necessary to support telemedicine and education and commerce, Congress should work with states and increase funding to appropriate state government agencies or create incentives for investor-owned broadband internet access providers to expand broadband capability and availability in all areas, but with additional focus on unserved and underserved areas to reduce the impact of the digital divide;
- Communications providers should sign the FCC's Keep Americans Connected Pledge and should extend the protections of that Pledge through August 2020;

- Communications providers should consider additional protections and relief programs for consumers that extend beyond the terms of the FCC's Keep Americans Connected Pledge, including, among other things, making every effort to find workable arrangements to allow consumers to pay any arrearages caused by the COVID-19 crisis over a reasonable period of time after the crisis eases;
- To ensure consumers have access to local news and community television channels—which may be the only sources of COVID-19 or other emergency-related information for certain consumers, cable television providers should consider extending the protections of the FCC's Keep Americans Connected Pledge to basic cable service and consider allowing consumers that cannot pay their bills for other levels of service to downgrade to basic cable service, without additional costs or fees, in lieu of disconnection, through August 2020 or 60 days after the end of the public health emergency, whichever is later;
- NASUCA affirms its historic support for universal service and affordability, service quality and the need for telephone service to reach as close as practicable to 100% of low-income households in the United States, as was originally provided for by the Communications Act of 1934 and the 1985 Lifeline amendments thereto, and as such programs are consistent with NASUCA policy positions taken over time in its resolutions and legal action(s); and NASUCA supports the uncapping and increasing of the Lifeline program funds so that for the duration of this public health and economic crisis the funding of such program is sufficient to meet need, provided that such reasonable protections against waste be retained to protect the public and NASUCA supports the expansion of the provision of voice minutes, text messages and broadband internet access over wireless Lifeline phones such that vulnerable families will retain full and reasonable access to online education, government, health/telemedicine and public safety services; and

Be it further resolved, that: Consumer access to utility-supplied water and wastewater services is critical to consumer health and safety:

- NASUCA affirms its support for legislation to fund critical water and wastewater infrastructure technical assistance and workforce development needs especially for small systems and systems burdened by lead and other nationally recognized contaminants. And all such action should focus upon maintaining or creating affordability, safety and potability of drinking water.

Be it further resolved, that NASUCA authorizes its Executive Committee to develop specific positions and take appropriate actions, consistent with the terms of this resolution and the needs of its Members and their utility consumers. The Executive Committee shall notify the membership of any action pursuant to this resolution.

Submitted by the COVID-19 Response Subcommittee
Passed by Membership Vote May 12, 2020

<u>Abstained</u>		
Kentucky AG	Ohio	Oklahoma AG
Tennessee AG	Texas	

Endnotes

-
- ⁱ <https://www.who.int/news-room/detail/27-04-2020-who-timeline---covid-19>
- ⁱⁱ <https://www.hhs.gov/about/news/2020/01/31/secretary-azar-declares-public-health-emergency-us-2019-novel-coronavirus.html>
- ⁱⁱⁱ <https://www.whitehouse.gov/presidential-actions/proclamation-declaring-national-emergency-concerning-novel-coronavirus-disease-covid-19-outbreak/>
- ^{iv} The U.S. Department of Labor reports that 16.4 million Americans are unemployed as of April 18, 2020 <https://www.dol.gov/ui/data.pdf>.
- ^v <https://www.nasuca.org/nwp/wp-content/uploads/2018/11/2019-07-NASUCA-Data-Collection-Resolution-Joint-with-NARUC-Final.pdf>; <https://www.nasuca.org/2018-04-data-collection-resolution/>



May 22, 2020

The Honorable Nancy Pelosi
Speaker
United States House of Representatives
U.S. Capitol, H-232
Washington, DC 20515

The Honorable Mitch McConnell
Majority Leader
United States Senate
U.S. Capitol, S-230
Washington, DC 20510

The Honorable Kevin McCarthy
Minority Leader
United States House of Representatives
U.S. Capitol, H-204
Washington, DC 20515

The Honorable Charles Schumer
Minority Leader
United States Senate
U.S. Capitol, S-221
Washington, DC 20510

RE: Additional Congressional Support for Utility Consumers Impacted by the COVID-19 Public Health Emergency and Economic Crisis

Dear Speaker Pelosi, Leader McConnell, Leader McCarthy and Leader Schumer:

On behalf of the National Association of State Utility Consumer Advocates (NASUCA)¹, I write to thank you for the support for utility consumers that Congress has provided in the prior COVID-19 stimulus packages. The COVID-19 public health emergency and economic crisis is unprecedented.

During this crisis, many utilities and communication providers have temporarily stopped disconnecting consumers while some have also reconnected consumers that had lost service prior

¹ NASUCA is a voluntary association of 58 state utility consumer advocate offices. NASUCA members represent the interests of utility consumers in 43 states, the District of Columbia, Puerto Rico, Barbados and Jamaica. NASUCA's full members are designated by the laws of their respective jurisdictions to represent the interests of utility consumers before state and federal utility regulators and in the courts.

NASUCA is the essential voice of utility consumers, representing and supporting utility consumer advocates in their efforts to achieve safe, reliable and reasonably priced utility services.

8380 Colesville Rd, Suite 101 • Silver Spring MD 20815 • 501-589-6313 • www.NASUCA.org

to the crisis. However, utilities and communication providers cannot continue indefinitely under these moratoria.

Congress must provide additional support to ensure consumers impacted by this crisis can maintain access to essential utility and communication services.

Our NASUCA members are acutely aware of the challenges utility consumers are facing during this COVID-19 crisis. We are working every day to ensure that universal access to affordable utility and communication services is not diminished during this public health emergency and economic crisis. We also recognize that the end of the COVID-19 public health emergency, however defined, will not correspond to the end of the economic crisis. Many utility consumers are already falling behind on their utility bills and will need uniform programmatic assistance and financial help to get back on their feet. This includes payment arrangements covering much longer time periods than normal, discount/assistance plans where none currently exist or expansion of existing plans. We will continue to work closely with utilities and communication providers, state governors, legislators, public utility commissions, energy and health agencies and other interested parties to address these needs.

NASUCA recently passed Resolution 2020-01 “*NASUCA Recommendations Concerning the Effects of the Public Health and Economic Crises Resulting from COVID-19 upon Utility Rates and Services Provided to Consumers by Public Utilities*”² Based on this membership statement of policy priorities we offer the following requests:

- **State Jurisdiction:** Congress should respect state jurisdictional and decision-making authority to determine the extent and duration of any shutoff moratoria and to control any rules related to disconnections and reconnections, utility communications, payment programs and revenue collection activities. While we understand the good intention of wanting to help utility consumers through a “one-size-fits-all” approach to moratoria, we support the position on state authority expressed by the National Association of Regulatory Utility Commissioners (NARUC) in its letter of April 20, 2020³. NASUCA members believe that state decision makers, including the public utility commissioners, are in the best position to assess the needs of both utilities and utility consumers and best equipped to determine the steps necessary to provide the broadest remedy to those impacted by this crisis. A “one-sized-fits-all” approach does not recognize the on-the-ground differences among the many states. Congress should not impose requirements or restrictions that impede state authority to craft the solutions necessary to address state

² <https://www.nasuca.org/nwp/wp-content/uploads/2020/05/2020-01-NASUCA-COVID-19-Policy-Resolution-Final-5-12-20-.pdf>

³ This position is also supporting in an April 21, 2020 letter to Congress from the National Association of Water Companies (NAWC), and an April 28, 2020 letter from the Edison Electric Institute.

NASUCA is the essential voice of utility consumers, representing and supporting utility consumer advocates in their efforts to achieve safe, reliable and reasonably priced utility services.

8380 Colesville Rd, Suite 101 • Silver Spring MD 20815 • 301-589-6313 • www.NASUCA.org

needs. Congress must avoid imposing additional disconnection moratoria or imposing restrictions that serve to hinder the ability of NASUCA members, utility commissions, utilities and communications providers to communicate with consumers about payment programs or other services designed to address consumer needs.

- **Low-Income Home Energy Assistance Programs:** We appreciate the effort Congress has made in its previous stimulus bills to increase LIHEAP funding to address the needs for low-income consumers. However, it is clear that consumers will need additional support as we head into the heat of summer. Providing low-income consumers additional support through LIHEAP will be an essential tool in recovering from the economic crisis and for getting consumers current on their utility bills. Congress should increase current fiscal year funding levels for LIHEAP and maintain that level of support through the next fiscal year. The National Energy Assistance Directors Association (NEADA) is recommending a \$4.3 billion increase in LIHEAP funding, although funding in excess of this level may be necessary to fully address this crisis.
- **Low-Income Assistance for Water and Wastewater Consumers:** Access to affordable water and wastewater services is essential for public health and safety. Consumers that are not able to pay their electric utility bill or natural gas utility bill during the current crisis are likely also not able to pay their water and wastewater bill. Yet there is no LIHEAP type federal assistance program to support low-income water and wastewater consumers. Congress should create and fund a LIHEAP type program to address the needs of low-income water and wastewater consumers.
- **Low-Income Assistance for Telecommunications:** NASUCA affirms its historic support for universal service and affordability, service quality and the need for telephone service to reach as close as practicable to 100% of low-income households in the United States, as was originally provided for by the Communications Act of 1934 and the 1985 Lifeline amendments thereto. We appreciate the action taken by communication providers pursuant to the Federal Communications Commission's (FCC) "Keep America Connected Pledge." To support low-income consumer access to necessary telecommunication service, Congress should require the FCC to support the uncapping and increasing of the Lifeline program funds so that for the duration of this public health emergency and economic crisis funding levels are sufficient to meet consumer needs, provided that such reasonable protections against waste be retained to protect the public. This includes supporting the expansion of the provision of voice minutes, text messages and broadband internet access over wireless Lifeline phones such that vulnerable families will retain full and reasonable access to online education, government, health/telemedicine and public safety services.
- **Direct Utility Assistance:** Many of the newly unemployed have likely never heard of LIHEAP and have likely never had to apply for LIHEAP or other utility bill assistance.

NASUCA is the essential voice of utility consumers, representing and supporting utility consumer advocates in their efforts to achieve safe, reliable and reasonably priced utility services.

8380 Colesville Rd, Suite 101 • Silver Spring MD 20815 • 301-589-6313 • www.NASUCA.org

Additionally, low-income assistance programs will not necessarily address the disconnections and revenue deficiency caused reduced commercial and industrial activities. Ultimately, to minimize the potential rate increases that retail consumers may face in the future and to also help maintain financial stability for utilities, Congress should consider providing direct funding to utilities with the instruction that the funding can be accessed and used only to reduce consumer arrearages through credits directly to consumer bills.

- **Eliminate Tax Normalization Rules for Excess Accumulated Deferred Income Tax Balances:** When marginal tax rates for utilities were reduced in the Tax Cut and Jobs Act of 2017 (TCJA), Congress required that the majority of the resulting excess accumulated deferred income tax (ADIT) balances be returned to consumers “normalized” over the life of the underlying assets. In simpler terms, with the new lower TCJA marginal tax rates, utilities are holding on to a pool of consumer supplied tax money in excess of what is needed to actually pay those taxes going forward. No one disputes this excess ADIT balance belongs to consumers and no one disputes that this money will be returned to consumers. It is simply a timing issue. Eliminating federal normalization requirements will allow states regulatory agencies to use the excess ADIT balances to help consumers recover from the COVID-19 crisis. Congress should eliminate the normalization requirement contained in the Tax Cuts and Jobs Act of 2017 associated with the flowback of excess protected accumulated deferred income taxes to allow state commissions the flexibility to use these consumer-supplied funds to either make rates more affordable or to fund programs to help consumers maintain necessary utility service.
- **Broadband, Telephone and Cable:** The COVID-19 crisis had put a spotlight on the importance to this country of a robust broadband communication network that is available to all consumers. To facilitate the additional capacity necessary to support telemedicine and education and commerce, Congress should work with states and increase funding to appropriate state governmental agencies, or create incentives for investor-owned broadband internet access providers, to expand broadband capability and availability in all areas, but with additional focus on unserved and underserved areas to reduce the impact of the digital divide.
- **Support for Water and Wastewater Assistance:** Small water and wastewater utilities have unique liquidity and infrastructure needs that must be addressed. Due to the lack of population density and the lack of economies of scale, small communities often face hurdles in supporting water and wastewater systems. Both urban and rural water systems may also have issues with lead and other contaminants and face other infrastructure challenges. All of these challenges are magnified by the current crisis. Congress should expand access and funding for existing programs that provide critical water and wastewater infrastructure technical assistance and workforce development support. Expanded access to these types of water and wastewater programs will help support the affordability and stability of water and wastewater services for consumers. Also, it will

NASUCA is the essential voice of utility consumers, representing and supporting utility consumer advocates in their efforts to achieve safe, reliable and reasonably priced utility services.

8380 Colesville Rd, Suite 101 • Silver Spring MD 20815 • 301-589-6313 • www.NASUCA.org

help support the safety and potability of drinking water during and after this crisis, especially for small systems and systems burdened by lead and other nationally recognized contaminants.

As Congress considers additional legislative action aimed at addressing the public health emergency and economic crisis caused by COVID-19, we appreciate your consideration and focus on the above policy priorities. Taking these actions will not only spread benefits widely across the country but will also put the utility consumers that NASUCA members represent in the best position to maintain access to safe, reliable, and affordable utility services. Taking these actions now will help keep consumers connected to the utility system, bring a level of revenue stability to utilities and reduce the need for future utility rate increases, increases that would only serve to exacerbate the current economic challenges. Taking these actions now will put states in the best position possible to manage through the current challenges and bring their economies back online.

Sincerely,



David Springe
Executive Director, NASUCA
8380 Colesville Road, Suite 101
Silver Spring, MD 20910
(301) 589-6313 (office)
(785) 550-7606 (mobile)
David.Springe@NASUCA.org
www.NASUCA.org
@NASUCADC on Twitter

NASUCA is the essential voice of utility consumers, representing and supporting utility consumer advocates in their efforts to achieve safe, reliable and reasonably priced utility services.

8380 Colesville Rd, Suite 101 • Silver Spring MD 20815 • 301-589-6313 • www.NASUCA.org

The CHAIRMAN. Thank you, Ms. Roberts. We so appreciate the perspective that you are providing to the Committee from the consumers. It is absolutely key to the discussion here. So, a good range. I appreciate all that you have contributed this morning.

As I mentioned, well, it was actually you, Mr. Nalley, you pointed to the report that will be coming out with regards to the updates. I think you said July 7th you are going to have an update from EIA. Again, it was Mr. Turk that said there would be a report out on Thursday. So know that the work that you are doing in these spaces really does help to inform us. It is important that we are not only looking back but also that we are looking forward as much as we can look forward at this time with continuing uncertainty. We don't know whether there is going to be another surge or a wave so that could throw all of your predictions out. And Mr. Macchiarola says that while the oil and gas sector is hanging in there, you are somewhat used to the volatility that comes with those markets, but we all know that you can sustain certain periods of uncertainty and volatility but when it continues for a long period of time, that is when things really get rocky and difficult to predict.

What I would ask for is some conversation, probably with you, Ms. Jacobson and Mr. Macchiarola, in terms of those things that we should be considering in this next iteration of economic recovery, relief, stabilization, whatever it is that we are calling it. Ms. Jacobson, you had indicated some areas where you think that from a regulatory perspective it certainly helped and some tax provisions as well, but I would ask both of you in terms of the relief that we provided under CARES, including the PPP, the Paycheck Protection Program, and the Main Street Lending Program, do we need to be doing more on that side to help going forward, again, looking at the recovery? Or is there more that we should consider in addition to what you have already provided in your testimony? I don't need you to repeat that, but if there is more, I want to try to understand how we can be responsive in this area.

Ms. Jacobson, let's go to you first.

Ms. JACOBSON. Thank you.

You know, I think you're right. I mean, the energy sector, just like all parts of the economy, especially, you know, all the focus mostly on small businesses right now, things like the Paycheck Protection Program were essential and when it was being developed, we didn't have clear information about what the needs were and then Congress and the Administration appropriately acted to make adjustments. We might still need to make adjustments, but we made, we did a number of surveys since early March of our own membership and asked them about PPP and when you look at the Bureau of Labor Statistics (BLS) data you see, in particular, that construction workers and small businesses in those sectors participated heavily in the PPP which also overlap with residential energy efficiency and other clean energy workers. So we think there's a high participation. You can't see it directly through the BLS data, but we can make some assumptions.

So if we look at the job losses that we've experienced in those parts of the clean energy economy, when PPP does transition, we could anticipate some challenges there. I think we all need to work

together and see if additional adjustments should be made. But I'll just say, you know, in my written testimony I call out a particular testimonial from someone who responded to our survey, thanking Congress and the Administration for making the adjustments to PPP that you did recently. It made a world of difference for those companies. So, thank you.

The CHAIRMAN. Let me ask you, Mr. Macchiarola, from the oil and gas sector, perhaps not so much PPP, but the Main Street Lending Program, I hear very loud and clear that the interest is not to have industry-specific financial relief. But in terms of those things that Congress can weigh in on to help facilitate all industries, how might the oil and gas sector be benefited moving forward?

Mr. MACCHIAROLA. Thank you for your question, Chairman Murkowski.

I think it's critical as Congress looks at the next phase of economic stabilization, again, to provide for stabilization across the economy. From our perspective in the oil and gas industry, the most important thing that Congress could do is to help get demand back which really means help get the economy back in a safe and swift fashion because from our perspective that was the number one driver of prices and the significant impact that the industry felt was really a result of demand. I would also say we appreciated the Department of Energy effectively managing the Strategic Petroleum Reserve. We thought that was smart using their existing authorities that they had. Finally, EPA providing flexibility with fuel waivers.

But in terms of asks going forward, our major request would be, essentially, do no harm, to prevent short-term measures that are, you know, may be put in place with good intentions as solutions that have long-term impacts. What I'm talking about there are things like punitive trade measures or tariffs or production quotas. We think that's the wrong direction to go in. We really appreciate the leadership of Congress and the Administration in not heading in that direction.

The CHAIRMAN. We appreciate that, thank you.

Let's go to Senator Manchin.

Senator MANCHIN. Thank you, Madam Chairman.

Ms. Roberts, I am really grateful for the advocates, the consumer advocates, like yourself, because it is so important for our system to have a balance. I support including \$900 million in energy utility assistance.

Ms. ROBERTS. Great.

Senator MANCHIN. For low income customers in our CARES Act and allowable expenses under the Paycheck Protection Program that was included into the CARES Act, the data coming in so far from April-May shows skyrocketing non-payment of utility bills. I was interested in what you had said also that the deferred income tax balances on utility books due to the corporate tax reductions in the Tax Cuts and Jobs Act, that Congress should eliminate the tax normalization rules. How much money is it—you said "billions of dollars"—they are holding?

Ms. ROBERTS. Well, I know in West Virginia it's hundreds of millions.

Senator MANCHIN. That the utilities are holding. They have that money.

Ms. ROBERTS. Because they're limited in how they can return that customer money to customers——

Senator MANCHIN. Could it not be used to offset the non-payments?

Ms. ROBERTS. It could be if they weren't limited by tax normalization——

Senator MANCHIN. Gotcha.

Ms. ROBERTS. We used a lot of the money to, in some cases, reduce rates. We established a fund for low income people, for veterans, for those who are on medical equipment.

Senator MANCHIN. But there has always been a surplus of money that they have never used all of the money that is set aside for the normalization, right?

Ms. ROBERTS. No, all the money as a result of the Tax Cuts and Jobs Act has not been used. There is still money available, but the tax normalization rules prevent it from being used sooner than on a normalized basis.

Senator MANCHIN. We are going to bring that to their attention. It is not in our jurisdiction, but we will bring it to the attention of Finance. It is so interesting to find out that there are ways of helping. And also, the thing that you said that I did not realize, I don't know if the Chairman did or not, that LIHEAP is not for water.

Ms. ROBERTS. No, it's not.

Senator MANCHIN. Never has been.

Ms. ROBERTS. Or for our telecommunications.

Senator MANCHIN. Yes.

Ms. ROBERTS. You're correct, non-payments are skyrocketing and part of that has to do with the timing of the relief that's come.

Senator MANCHIN. Yes, I know, it has been——

Does anybody else want to comment on that or—what we are talking about there? This is to all of you. What policy solutions are needed to strengthen U.S. energy manufacturing up and down the supply chain? We are seeing that we know we had a deficiency for our COVID-19 response as far as our medical equipment and testing and all that because most of it was done overseas. But now we are finding out a lot of the energy projects are not being able to be——

Do you all have any idea on that as far as what we could do? Mr. Nalley, you might be able to speak to that or Ms. Jacobson? Either one of you?

Ms. JACOBSON. Thank you very much for the question.

Senator MANCHIN. Have we known that we have had most of the critical manufacturing for our energy fleet coming from offshore?

Ms. JACOBSON. Yeah, we have currently and, you know, now and before the COVID-19 pandemic, we have a global energy marketplace and yes, supply chains have been disrupted. I can speak anecdotally, you know, from the surveys that we've done, this is a top issue for the companies and industries that I work with, and they're trying to adjust and manage and be strategic going forward. But there are some really important public-private partnerships that the Federal Government already is looking at. And when I

think about things like the American Energy and Innovation Act or, you know, the Surface Transportation bill, there are many opportunities to create market demand, combining that with programs through the Department of Energy like the Advanced Manufacturing Office or things like new tax incentives to promote manufacturing here at home.

So we're, kind of, in a whole new reset moment on this conversation with incredible urgency. I think you're very appropriately going to be focusing on supply chains next week. I look forward to hearing how the witnesses respond because things are evolving in real time. But I think there are current tools that we already utilize that can be explored again and perhaps expanded. And again, I think close interaction with industry is going to be very important at this time so we make sure that whatever Federal Government attention and resources are put to bear that they're done appropriately and strategically in the current environment we're in.

Senator MANCHIN. Thank you, Madam Chairman.

The CHAIRMAN. Thank you. Thank you, Senator Manchin.

Senator BARRASSO.

Senator BARRASSO. Thank you, Madam Chairman. I want to thank you and I want to thank Ranking Member Manchin for holding this important and timely hearing today.

The COVID-19 pandemic has affected every aspect of modern life. As nations close down around the world in an effort to slow the spread of the virus, economies around the world ground to a halt. Demand for energy as a result, slowed significantly, reduced demand for electricity, transportation fuels which power the modern world. In the early days in the pandemic an oil price war between Saudi Arabia and Russia led to massive oversupply of crude oil on global markets. Oil prices tanked. Crude oil storage facilities filled up. On April 20th of this year, oil prices actually traded in the negative. Over the past few months I have encouraged the Secretary of the Interior to provide lease extensions to provide royalty relief and suspension of production for oil, gas, coal, soda ash producers, on federal land. This form and these forms of temporary relief will help provide a measure of certainty and will help operators weather this devastating time. So the question, Mr. Nalley, how will temporary federal royalty relief and suspensions improve the outlook for oil and gas producers on federal land?

Mr. NALLEY. Senator Barrasso, thank you.

In most of our modeling, our forecasts are based upon current rules and regulations, so I don't really have anything to offer today in terms of what proposed legislation might do.

Senator BARRASSO. The question of allowing some of this sort of thing, in terms of the specifics of providing royalty relief, how will that improve the outlook for production? Will these companies then say, well this will allow me to continue to produce because it is not going to cost them as much? How do you see that, rather than just from a legislative standpoint?

Mr. NALLEY. I'd have to get back to you with—our folks could take a look at that and we could get back to you with that information.

Senator BARRASSO. Alright.

[Information regarding temporary royalty relief follows.]

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *COVID-19 Energy Economic Impacts*
Follow-up questions submitted to Mr. Stephen Nalley

Q1. Senator Barrasso: So, the question, Mr. Nalley, how will temporary federal royalty relief and suspensions improve the outlet for, the outlook for oil and gas producers on federal land?

Mr. Nalley: Senator Barrasso, thank you.

In most of our modeling and forecasts are based upon current rules and regulations so I don't really have anything to offer today in terms of what proposed legislation might do.

Senator Barrasso: The question of allowing some of this, this sort of thing, in terms of the specifics of providing royalty relief, how will that improve the outlet for, the outlook, for the production? Will these companies then say, well this will allow me to continue to produce because it's not going to cost them as much or how do you see that rather than just from a legislative standpoint?

Mr. Nalley: I'd have to get back to you with -- our folks could take a look at that and we could get back to you with that information.

Senator Barrasso: Alright.

A1. Temporary federal royalty relief and suspensions of federal royalties for oil and gas production on federal land would effectively raise the net price of oil and natural gas that producers receive. According to the Government Accountability Office (GAO), if a producer sells a barrel of oil at the WTI benchmark crude oil price of \$41.00 per barrel and the royalty rate is 12.5%, then that producer is paying \$5.13 per barrel in royalties. About half of the royalty goes to the U.S. Treasury and half goes to the state where the federal lease is located. The federal royalty rate for offshore production is 18.75%. This GAO report published in 2019 provides an extensive discussion of royalty rates
<https://www.gao.gov/assets/700/699433.pdf>.

Senator BARRASSO. The EIA recently released its annual report on uranium production. I want to focus on that now, if I could. The report shows 2019 production of American uranium was down 89 percent from 2018. Wyoming has led the United States in uranium production. The outlook for our nation's uranium production, I believe, is dire. We need to reverse this alarming trend. That is why I have supported immediately establishing the Department of Energy's Uranium Reserve. It is something that they have proposed.

Absent immediate action from Washington to increase uranium demand, does the EIA expect American uranium production to recover?

Mr. NALLEY. So I would agree with you that the production in uranium is, you know, at record lows and we don't have any forecasts on that built into our Short-Term Energy Outlook. We do provide two reports annually and a quarterly report to help answer those questions.

Senator BARRASSO. In April of this year, the Department of Energy identified how Russia has weaponized its energy supplies in an effort to undermine America's energy and our national security interests. We have known it all along and the Department of Energy is now identifying it, saying that Russia is behaving in that way. Due to Russia's illegal trade practices, Congress previously capped Russian uranium imports at 20 percent of our nuclear market. The caps are set to expire at the end of this year, 2020. I am working to extend it and reduce how much Russian nuclear fuel can be used in our nuclear power plants in the United States, so we are not increasingly dependent upon Russia as they undermine our market in an effort to give them a bigger market share.

The Energy Information Administration provides valuable market information to develop our national uranium policies. Mr. Nalley, what data does your agency provide to inform policy decisions about nuclear fuel imports and how does this play into it?

Mr. NALLEY. So again, it's on an annual basis as the nuclear import data comes out. We can get that information, you know, back to your staff or you.

Senator BARRASSO. I would appreciate it if we could get all of that information from you.

[Information regarding nuclear import data follows.]

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: COVID-19 Energy Economic Impacts
Follow-up questions submitted to Mr. Stephen Nalley

Q2. Senator Barrasso: So, in April of this year the Department of Energy identified how Russia has weaponized its energy supplies in an effort to undermine America's energy and our national security interests. We've known it along, all along and the Department of Energy is now identifying it saying that Russia is behaving in that way. Due to Russia's illegal trade practices, Congress previously capped Russian uranium imports at 20 percent of our nuclear market. The caps are set to expire at the end of this year, 2020. I'm working to extend and reduce how much Russian nuclear fuel can be used in our nuclear power plants in the United States so we are not increasingly dependent upon Russia as they undermine our market in an effort to give them a bigger market share.

The Energy Information Administration provides valuable market information to develop our national uranium policies. So, Mr. Nalley, what data does your agency provide to inform policy decisions about nuclear fuel imports and how does this play into it?

Mr. Nalley: So again, it's on an annual basis is the nuclear import data comes out. We can get that information, you know, back to your staff or you.

Senator Barrasso: I'd appreciate it if we would get all of that information from you.

A2. EIA collects uranium data on three surveys, the EIA-851Q Domestic Uranium Production Report - Quarterly, the EIA-851A Domestic Uranium Production Report - Annual, and the EIA-858 Uranium Marketing Annual Survey. These surveys cover every entity involved in the U.S. uranium industry, by compiling a list from the Nuclear Regulatory Commission and state licensing data bases, and reported uranium contracts.

The EIA-851Q collects data on domestic monthly uranium production and sources. The latest Domestic Annual Production Report - Quarterly can be found here:

<https://www.eia.gov/uranium/production/quarterly/>.

The EIA-851A collects data on domestic uranium milling and processing, uranium feed sources, employment, drilling, expenditures (for drilling, production, and land/other), and uranium mining. The latest Domestic Annual Production Report – Annual can be found here:

<https://www.eia.gov/uranium/production/annual/>.

The EIA-858 collects data on contracts, deliveries, enrichment services purchased, inventories, use in fuel assemblies, feed deliveries to enrichers. Data on deliveries include information for the reporting year and projected deliveries for the next ten years. In addition, this survey collects information on expected

unfilled market requirements that cover the next ten years. The latest Uranium Marketing Annual Report can be found here: <https://www.eia.gov/uranium/marketing/>.

Specific information for many countries, including Russia, can be found in the following tables:

- Uranium purchased by owners and operators of U.S. civilian nuclear power reactors by origin country and delivery year, 2015–2019: <https://www.eia.gov/uranium/marketing/table3.php>
- Deliveries of uranium feed for enrichment by owners and operators of U.S. civilian nuclear power reactors by origin country and delivery year, 2017–2019: <https://www.eia.gov/uranium/marketing/table14.php>

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *COVID-19 Energy Economic Impacts*
Follow-up questions submitted to Mr. Stephen Nalley

- Purchases of enrichment services by owners and operators of U.S. civilian nuclear power reactors by origin country and year, 2015–2019: <https://www.eia.gov/uranium/marketing/table16.php>
- Uranium sellers to owners and operators of U.S. civilian nuclear power reactors, 2017–2019: <https://www.eia.gov/uranium/marketing/table24.php>
- Enrichment service sellers to owners and operators of U.S. civilian nuclear power reactors, 2017–2019: <https://www.eia.gov/uranium/marketing/table25.php>

Senator BARRASSO. Thank you. Thank you, Madam Chairman.

The CHAIRMAN. Thank you, Senator Barrasso.

Let's turn to Senator King.

Senator KING. A couple of questions. I will start with Mr. Nalley about the duration of what we are talking about. This is not a recession in the sense that the financial crisis of 2008 was a structural issue. This was, essentially, a pause, we hope it was a pause, in demand. And so, I understand I am asking you to predict two different things: one is whether we are going to go into a second wave and a further constriction of demand and also what are the long-term economic effects. But it seems to me that it is possible that once we get a vaccine or we are otherwise out of these woods, that demand will spike back rather rapidly.

I just saw this morning we had a 17 percent increase in retail sales just in this past May. Talk to me about how long this is going to last and is this going to be a V-, an L-, a W-shaped, recovery that we are talking about?

Mr. NALLEY. Well, good morning.

So I think the uncertainty that we're all dealing with is the most challenging. We, you know, are using underlying forecasts for IHS markets, for U.S. GDP and Oxford economics for a global GDP. And so, you know, modeling, we use as, you know, sort of, foundational pieces in our modeling. We have really great people taking a look, paying attention to all the issues and all the trends that are going on. And as you said, some of the things with the second wave are those types of things, we're really looking for signals that were coming, other sources to make sure that we're capturing this right. We have, you know, people working very hard to make sure that we are, you know, getting this just right each month. And as I said, we put out a new STEO forecast in July. So we will update, you know, our forecast at that point based on the best information we have then.

Senator KING. Do you see the job losses as job losses or job vacancies? In other words, after we get out of this, the undermining of the economy that we are enduring right now, will those jobs come back or are they jobs that are going to be permanently lost because of changes in design of the workforce or other factors? In other words, are these jobs—we talk about them being lost—are they lost or are they merely on hiatus for some period of time until there is a recovery?

Mr. NALLEY. Right, so EIA's forecast and data are really focused on supply and demand patterns and we collect very little and publish very little information about jobs. I'd actually defer to other panelists to comment on—

Senator KING. Let me go to Ms. Jacobson then. Are we losing jobs or are we losing companies? And respond to my question about whether these are job losses or temporary job losses?

Ms. JACOBSON. Right, well, I mean, I completely agree we're in a very uncertain environment, but I think when we're looking at the data in terms of the residential energy job losses, things like renewable energy and energy efficiency workers, I think it depends on a number of factors, but primarily when customers and households feel that it's safe to have technicians and installers and con-

tractors in their home to do work. And you know, that is a very variable and unpredictable thing.

You know, I wanted to share with you, Senator King, I received a testimonial from Mid Maine Weatherization as part of some surveys we did in anticipation of this hearing. It's not exactly clear the moment in time that they put this forward but, you know, here we have, you know, a small business, a weatherization, energy efficiency business saying, we've been unable to work. If our business loan is denied, then we will unfortunately lose our business. So in addition to the factors of when it is appropriate from a health perspective to continue this kind of work, there's also the business cycle and the business model challenges and those benefit, as we discussed before, from things like the Paycheck Protection Program and other measures.

Senator KING. I was going to follow up and ask, I wonder if that company availed themselves of the Paycheck Protection Program.

Ms. JACOBSON. Right.

Senator KING. I think you mentioned that had been effective in helping many of these businesses to weather this abrupt downturn.

Ms. JACOBSON. Yes, and as I also mentioned, I think there's a little concern about what might happen when the 24 weeks end. So I think we all need to watch that closely. You know, clearly, clean energy sector broadly, 70 percent of employees are employed by small businesses. So things like the PPP are critical.

Senator KING. I agree. Thank you.

Thank you, Madam Chairman.

The CHAIRMAN. Thank you, Senator King.

Let's go to Senator Lee. Morning.

Senator LEE. Good morning. Thank you very much, Madam Chair. Thanks to all of you for being with us and your willingness to inform us today.

Mr. Macchiarola, I would like to start with you. In oil fields, well shut-ins typically occur under circumstances that are less than ideal and something big or something of a last resort because this is an indication that, you know, in many circumstances, it is not possible to continue to coax a well back into production. So flow from the well is halted, and the well is capped. Can you tell us why a well shut-in could be so catastrophic?

Mr. MACCHIAROLA. Sure. The data is a little uncertain on this and we did have a request from your office and are happy to follow up with you on it as well. I think we do have evidence of natural gas wells being less productive post shut-in and there was a concern. In fact, one of the concerns we raised during the Texas proration debate was that, was that very concern, Senator. That if you shut that, shut-in a well, you may raise the real possibility that the well is not as productive when it comes back online. Of course, this was a significant concern for the entire industry during this crisis.

As I mentioned at the top, we saw levels of demand decline in April that were down to 20-year lows and we still saw during that period of time the most productive month of productivity out of Saudi Arabia during that same period of time. So it's a big concern. It's obviously alleviated itself somewhat as a result of economies coming back and demand returning. But it's an important question

that you raise and something that we're going to look further into, particularly as possibilities of shut-ins arise.

Senator LEE. But you have definitely seen an increase in the rate of shut-ins since the beginning of the pandemic? That is——

Mr. MACCHIAROLA. Yeah. Yes.

Senator LEE. And do you think that extractive companies are going to need to reinvest in oil well infrastructure in order for us to have the capacity to return to pre-crisis production rates?

Mr. MACCHIAROLA. Well, Senator, we're a capital-intensive industry. So what you saw in a lot of the adjustments during the COVID period were on short-cycle projects, capital expenditure reductions there. Longer-term projects you saw, you know, generally speaking, a degree of less pullback but, you know, our sense is that, you know, to both your question and Senator King's, you know, we have a—our industry is one that has a long-term outlook.

And so, over time as you look out to demand and to population growth so the next 30 years what we're going to see global population according to the U.N. grow from about seven and a half billion people to over nine billion people. Those folks are going to expand the size of global middle class and prosperity around the world, and they're going to need energy to do that. And over 50 percent of that energy is going to come from oil and natural gas out over the next three decades. And so, to your point, it's absolutely essential that we make those capital investments and that we really restore America's energy leadership. Over the past ten years we've moved from a period of energy dependence to being the world's leading producer of oil and natural gas. That's had tremendous benefits for the United States. And in fact, though we're experiencing a very difficult time right now, it would be worse for the energy industry if we had not had this dramatic expansion over that period of time.

But thank you for your question and happy to follow up with your staff as well.

Senator LEE. Thank you very much. That is very thoughtful.

Thank you, Madam Chair.

The CHAIRMAN. Thank you, Senator Lee.

Senator Cortez Masto.

Senator CORTEZ MASTO. Thank you, Madam Chair and Ranking Member, and thank you to the panelists, I so appreciate the conversation today.

Ms. Jacobson, I would like to start with you. Environmental Entrepreneurs issued a report yesterday that found that an additional 27,000 clean energy jobs were lost in May 2020 bringing the total COVID-19 related losses in clean energy workforce to over 620,000. Now more than 5,000 of those clean energy jobs were in my home State of Nevada. The energy sector continues to be the hardest hit during this pandemic, and rooftop solar companies which rely on face-to-face interaction with consumers to secure future projects are also struggling to keep projects in the pipeline.

Can you talk a little bit more about the impacts of COVID-19 on your members and what are they doing to adapt business in a COVID world? And then secondly, what should we be doing in Congress? I know you talked a little bit about the PPP program, but

what else can we be doing to help build back that energy sector economy and boost job growth?

Ms. JACOBSON. Yeah, well, thank you very much for the question and yes, the reporting that's been done on job loss and the energy sector overall as well as what it's providing in terms of a view into clean energy sector's job trends has been so helpful over the past couple of months. So I'm really grateful for the, to the supporters of that research. I think first and foremost across the board, and this is true for businesses in your state too, you know, safety. Number one is the safety of their employees in whatever, you know, kind of work environment they're in and whatever current business condition they're in. So if they are contemplating expanding the opportunities that they have to work again in homes, then their number one concern is making sure that their employees are following all the state and local rules and that they are protecting both themselves, their families and their customers. And so, I think there are things that the Federal Government can do through the State Energy Offices as well as other areas to help state and locals and tribes understand how they can help businesses as we reopen, when it's safe to do so.

You know, also they are trying to help their employees navigate all the support that they might need at a local level and the Federal Government is helping workers who are either furloughed or are out of work and then, you know, they're trying to access the business programs that are available to them across the board as we've discussed before. In terms of what the Federal Government can do now to assist those types of businesses, I mean, for, you know, to talk for a second more about the residential sector, this is again, energy efficiency and renewable energy. You mentioned solar installers, you know, they may be in partnership with utilities and many of those programs, you know, immediately ceased once the health pandemic was in full force in early March and they've not resumed. And that's a big partnership that they have with their utility programs.

So again, they're in a very constrained environment right now, but in terms of what the Federal Government can do from a policy perspective, in terms of immediate relief, if there are policies that are on the books that were set to expire or have additional deadlines, you know, within this year or the next 18 months, we should look at them because we've now lost at least a quarter of business activity. It may be extended. And so, you know, four things that Congress has already said are important policies, we want to make sure they can be fully utilized.

And then on the economic recovery side, you know, the last time we made a big strategic investment like this on a national level was with the stimulus program after the financial crisis, and we've seen that, those strategic investments coupled with partnerships with the private sector and state and local activity, a great transformation and very significant job growth and economic activity in the energy sector that came from those investments.

So I think we need to look at research development and deployment programs. Again, I really urge Congress and the Administration to pass the American Energy Innovation Act this year. We have a surface transportation bill that's pending. There are many

pieces in there that would be very helpful to send a signal to the marketplace that, you know, clean energy jobs can be forward-leaning in our recovery and again, we need to be in an environment when it's safe for business activity to resume. So I think we need to be talking over these next several weeks and months about how best to progress.

Senator CORTEZ MASTO. Thank you. Thank you, Ms. Jacobson.

I know my time is up. I will submit the rest of my questions for the record. Thank you, Madam Chair.

The CHAIRMAN. Thank you, Senator Cortez Masto. Yet another rallying cry for our energy bill. We appreciate that. Thank you, Ms. Jacobson.

Let's turn to Senator Daines.

Senator DAINES. Thanks, Chair Murkowski.

Montana has a very robust energy industry, and it is struggling. For Montana, it was the perfect storm. Oil prices drop in the negatives due to Russia and Saudi Arabia manipulation while demand across the board dropped overall due to COVID-19. Coal jobs also saw a major hit with a number of companies having to lay off workers where unemployment was already an issue. No one was left untouched, whether it is miners, refiners, pump stations, and energy generators, they all felt an impact. We have been working with the Administration to find targeted solutions, but we have still got a lot of work to do. I think more temporary relief, both regulatory and royalty relief, for our energy producers is needed. I also think the quicker we can get people back safely to work, back to traveling, back to a normal day-to-day routine, the better it will be for industries across the board.

I do want to focus on a few key issues that are important to keeping Montana's energy industry working. Mr. Macchiarola, as you know, this is a historic week for conservation and our public lands. Passage of the Great American Outdoors Act will guarantee the next generation of public lands conservation and the economic benefit they provide for the nation. This week is also a time to remember a very important link between energy production and conservation. The Land and Water Conservation Fund and public land maintenance is funded by energy revenue. That means that the stronger our energy sector, the more we can invest in our public lands. However, if the oil and gas industry is weakened because of COVID-19, foreign price meddling or because of federal bans on oil production, like some Members of Congress have advocated for, then our ability to protect our public land is also weakened. How can we make sure the U.S. continues to be energy dominant so programs like the Land and Water Conservation Fund will continue to see funding year after year?

Mr. MACCHIAROLA. Thank you for your question, Senator Daines. And just to put some—you use the phrase energy dominance in the United States. Just to put a perspective, I think, on what you mean, back in 2008, the last time we faced an economic disruption we were producing about 6.8 million barrels per day here in the United States and using close to 20 million barrels a day. At the beginning of this crisis we produced about 13.1 million barrels per day here in the United States. That energy security that that provided was essential, not just in providing for good paying jobs and

growth in employment and the economy but also in our national security as we faced threats from producers around the world.

You raised the issue of the Land and Water Conservation Fund (LWCF). In Fiscal Year 2019, the federal revenues from production of energy were the second largest source of revenue for the Federal Government. I think the Department of Interior took in about \$11.7 billion. Nearly a billion of that went to the Land and Water Conservation Fund, important programs of conservation on trails and national park areas and ball fields. In fact, in all the states across the country that funding is essential for conservation measures, couldn't be done without the royalties and the revenues that are paid as a result of American energy. So I think you're absolutely right, Senator, that combination of both being able to restore our standing in the world, to be able to raise employment and enhance our own economic security, coupled with the fiscal stability that it provides for government revenues for those important projects is just essential.

Senator DAINES. Thank you. A follow-up question for you. As you know, this is a historic week for LWCF, but also there was another court decision that will have a sweeping negative impact, not only on energy infrastructure projects, but also broadband and utility infrastructure. A Montana judge recently struck down the Army Corps of Engineers Nationwide Permit 12 which is used to safely and expeditiously approve permits for projects crossing U.S. waterways. I believe an API analysis shows that over 70 pipeline projects alone would be affected. One of these projects that may be affected is the Keystone XL Pipeline which enters the United States in Montana. This project along with numerous other pipeline infrastructure projects is hugely important for high-paying Montana jobs and revenues for local communities. It is a big, big part of the future for our counties out in Eastern Montana to support local government, the revenues coming into those counties because of the pipeline.

What do Congress or the Administration need to do to get the Nationwide Permit 12 restored so infrastructure jobs can continue to grow in places like Montana?

Mr. MACCHIAROLA. Yeah, thanks for your question, Senator Daines.

So an interesting juxtaposition in court cases. You saw the Supreme Court approve the Atlantic, the right-of-way in the Atlantic Coast pipeline and a couple of weeks ago, as you mentioned, you saw the, a Federal District Court in Montana revoke the Nationwide Permit 12. It's imperative that we restore the Nationwide Permit 12 with—there are currently about 70+ infrastructure projects ongoing in the United States. An assessment of 11 of those projects total about capital expenditures of around \$32.3 billion, that's about half a million jobs, 150,000 jobs directly on construction of those projects. It's absolutely essential from an employment perspective, from an economic perspective, from an energy security perspective that we get this right.

We hope that, you know, there are successful appeals to this. We're also going to work with Congress and the Administration to restore Nationwide Permit 12. We know the importance of this project in getting Keystone over the finish line. It's absolutely es-

sential that we invest in our energy infrastructure here at home. It is essential, again, for our energy security. It's essential also for our economy, but it's also essential for our environment as well. That, those projects are critical for the use of American energy with the highest standards around the world of environmental stewardship. And so, I would, you know, urge Congress to restore the Nationwide Permit 12 and we will be working vigorously with the Administration——

Senator DAINES. We talk about shovel-ready projects. One judge just grabbed the shovels out of the hands of American workers for 70 different pipeline projects. Thanks for your comments.

Chair Murkowski, I have a couple more questions that I will submit as QFRs.

The CHAIRMAN. Great. Thank you. We appreciate that.

Let's turn to Senator Hirono, please.

Senator HIRONO. Thank you, Madam Chair.

This is for Lisa Jacobson. In the face of the pandemic and the reality of the growing costs of climate change we need to look for opportunities to build a stronger, cleaner economy. In May, Hawaii Electric announced it is negotiating contracts for 460 megawatts of renewable energy and three gigawatt-hours of energy storage projects to help replace fossil fuel plants on the islands of Oahu, Maui and on the Big Island. But not all states have taken Hawaii's steps to becoming 100 percent renewable energy to save residents money in the long run. Unfortunately, we do not have a similar long-term national plan.

In your testimony you detailed the job losses in the clean energy sector and corporate expansion of federal support for research, development, and demonstration at DOE to support private investment in clean energy sectors and resilience. How quickly could clean energy businesses start rehiring if Congress prioritized support for clean energy in an economic recovery bill?

Ms. JACOBSON. Thank you very much for the question.

You know, I think it will be different for different programs and different segments of the energy economy in terms of how quick the impact will be but, you know, I think, generally speaking, across the Business Council's membership we've received about 150 different types of policy proposals that would be helpful both in immediate relief and different phases of economic recovery. And we've gone through and have tried to characterize as best we could. And I would say many of those do fit into the one- to two-year time-frame.

So we did immediate relief which are things like, as I said, you know, looking at the laws on the books and if we need to, for market stabilization purposes, provide a delay in a phasedown or an extension in a deadline because those particular policies couldn't be utilized, well then, we need to look at that and do so quickly. That will send a very strong signal to the market. And then, in the research, development, and deployment arena there are different types of efforts. There are some things where we have programs that have proven, a proven track record or we have experience from the American Recovery and Reinvestment Act that we can get a lot of economic benefit and jobs quickly, but we should look at those programs first, especially if they are under existing authority. And

then, the private sector is watching, you know, urgently with everybody to see when it's appropriate to get moving again.

And you mentioned, of course, clean energy and the environmental imperatives that we face. So strategic investments across the energy sector are essential, but I'm very appreciative of this Committee's interest in looking in clean energy industries, in particular, as we think about the policy landscape for economic recovery and renewal.

Senator HIRONO. Is the level of funding in the American Energy and Innovation Act—which you said that we should pass as soon as possible—that the Senate was considering in March sufficient given the economic crisis we now face?

Ms. JACOBSON. I think the American Energy and Innovation Act is a foundational set of policies. We know it is, you know, the process that went into it, its strong, bipartisan support, the breadth of technologies and industry sectors it would impact, you know, is quite remarkable and extremely valuable at this time. I think, you know, we're at a point now though where whatever benchmarks we had in terms of investment, we need to reassess given the conditions on the ground and the business environment we're in. So I know that many of the proposals that BCSE members have shared with me provide, you know, enhanced and expanded investments in existing policies and programs that work, you know, looking for ways to use the tax code to drive market change with the private sector.

So you know, we're in a game-changing moment. And so, you know, what we were looking at a year ago we might need to do much more to stimulate the energy economy in the months and years ahead.

Senator HIRONO. One more question. You have called for Congress to increase funding for LIHEAP, and we are seeing losses at the utilities because of lower demand, et cetera, in the commercial sector. So how high is the need among customers, consumers, for assistance with utility bills that you and other utility customer advocates are seeing across the country and are there other things Congress could do besides increasing the funding for LIHEAP? What else can we do to make it easier for people to get help with their utility bills in addition to, as was said, increasing the funding for LIHEAP?

Ms. ROBERTS. Thank you for that question.

The LIHEAP is critical for low income customers but let's step back a second and say, what is the issue here with customers not paying utility bills and the effect on utilities? It's really a cashflow problem. Customers will have to pay their utility bills. They're not being forgiven their utility bills. There are moratoria. So we will take all the LIHEAP money we can get and we will administer all the LIHEAP money that you would allow. But we also need money for customers that never were on LIHEAP, have always paid their bills and they just aren't working now. So those are two areas that are important.

Helping the customers also helps the utilities because it helps their cashflow and it helps them recover from the really high levels of arrearages they're seeing now, and I hope that answers your question.

Senator HIRONO. Thank you, Ms. Roberts.
I have two more questions that I will submit for the record,
Madam Chair.

The CHAIRMAN. Very good, thank you, Senator Hirono.

Let's turn to Senator Cassidy. I am told that your video may or
may not work, but hopefully we can hear you.

Senator CASSIDY. Yes, I hope you can hear me.

The CHAIRMAN. Yes, we can.

Senator CASSIDY. Can you see?

The CHAIRMAN. You are good, Bill.

Senator CASSIDY. Great.

Obviously, the demand destruction that was discussed earlier
has had an incredible impact upon energy states. I am told there
has been \$40 billion in capital expenditures cut across energy busi-
nesses and in two parishes in Louisiana there were 25,000 jobs lost
related to drilling in the Outer Continental Shelf, and I could go
on.

Mr. Nalley, EIA projects demand will recover quicker than sup-
ply but that U.S. production will decline until next spring. How
much further production does EIA forecast will be taken offline by
domestic producers, and related, which basins are most vulnerable
to further production cuts?

Mr. NALLEY. I appreciate the question.

I'll have our staff get that information and get back to you.

Senator CASSIDY. Okay.

If there is a resurgence of COVID-19 cases later this year, what
impacts does EIA think that will have on crude inventories and oil
prices, assuming that the storage levels are still higher than pre-
COVID and oil prices still lower the next year?

Mr. NALLEY. Alright, well, I think one of the difficulties in the
modeling forecasting of this, particularly in the short-term, is
things like that, is there a resurgence or not? And so, you know,
we're looking at all those things. Our folks are paying attention to
all the signals and using the underlying principles of, you know,
GDP and trying to make sure we build that into our models to
make sure we do the best of forecast through next year. But there's
nothing in there, in our current forecast that has a second wave or,
you know, to answer that question.

Senator CASSIDY. Well, it seems like you need to do that sort of
thing, just because all the public health folks are saying that is a
risk. I am not chiding, I am just asking, because it does seem that
would be necessary.

Another question, Mr. Nalley. The natural gas market has not
been as hard hit as the oil market, but I am told EIA still expects
natural gas production to decrease by two percent in 2020. What
are your overall thoughts on the future of the gas market and how
will the decline of crude oil production affect associated gas produc-
tion? And then related to that, if there is a decline in associated
natural gas production, what will happen to dry gas basins such as
the Haynesville? Do you expect those to increase their production?
So your overall thoughts in the future. What is the impact of de-
creased associated gas production and if you see decreased associ-
ated gas production, do you see an increase in production from dry
gas basins?

Mr. NALLEY. Well, we expect U.S. dry gas production to decline on average about 87.—89.7 BCF per day in 2020 from the 2019—

Senator CASSIDY. That is dry gas?

Mr. NALLEY. I'm sorry?

Senator CASSIDY. That is dry gas production or overall gas?

Mr. NALLEY. That's dry gas.

Senator CASSIDY. Gotcha.

Mr. NALLEY. So what we expect, like you said, the production declines further into 2021 to an average of about 85.4. So we can get some information back to you and your staff about the individual areas.

Senator CASSIDY. Okay.

Mr. Macchiarola, I understand there tends to be, when we talk about offshore oil and gas production, a general breaking in point for older versus newer offshore, deepwater wells, and obviously that factors into the discussions of royalty relief, et cetera. Can you comment on what those break-even points are for older versus newer wells?

Mr. MACCHIAROLA. Yeah, so, Senator, as a trade association we often don't get into discussions of price, but what I can tell you is as you, as a general matter, as you enter into more frontier areas—the costs associated with that deepwater production usually tend to be more costly than areas in shallow, and then over time those costs recede. But costs in general have a number of factors associated with the basin that you're in, the overall cost profile that you have, the service and supply arrangements that you have, your debt profile.

With respect to your question on royalties, though, Senator, it's a bit tricky because on the one hand we set up royalty relief back in a time where we wanted to enhance production. I'm thinking of the Deep Water Royalty Relief Act that this Committee was responsible for, in fact, and that was a time, again, when we were trying to enhance energy production here in the United States. Fast forward to the situation we were in most recently, we did not want to increase productivity, we wanted to rebalance the market. The imbalance between demand and supply was quite significant during this period of time. But we also recognized that producers and operators of U.S. companies were struggling, in part because of market conditions and in part because of oversupply activities on the part of OPEC+ nations.

And so, I think it made a lot of sense for the Department of the Interior to look at existing authorities that they had, both with respect to questions of relief, as well as questions of extensions of leases. Ultimately, as I noted at the top, we did not advocate for royalty relief, but we appreciated the Administration, really across the board, looking at their existing authorities to be able to mitigate what was really an energy crisis. I think about EPA and their fuel waivers. The Department of Energy on the Strategic Petroleum Reserve.

Senator CASSIDY. So if you could wrap up, because I know I am way over time.

Mr. MACCHIAROLA. Sure.

And then to your point, the Interior looking at individual operators and their particular situation with respect to royalties. So I

thank you for your question and am happy to follow up after the hearing as well.

Senator CASSIDY. Thank you. I yield back.

The CHAIRMAN. Thank you, Senator Cassidy.

I understand that Senator McSally has asked to defer to Senator Hoeven at this point in time. So we will go to Senator Hoeven.

Senator HOEVEN. Thank you, Madam Chairman, I appreciate it.

My first question is for Deputy Administrator Nalley, and it is regarding the Strategic Petroleum Reserve, something I know that our Chairman has worked very hard on through the years. I have legislation that is both bipartisan and bicameral that would authorize purchases by the Department of Energy for the Strategic Petroleum Reserve. My question for Deputy Administrator Nalley is, do you agree that filling up the Strategic Petroleum Reserve would help alleviate some of the supply concerns that we see right now in the oil markets?

Mr. NALLEY. I'm sorry, I didn't hear the last part of the question.

Senator HOEVEN. That passing this legislation and filling up the Strategic Petroleum Reserve would be a good idea to help alleviate some of the supply challenges we have right now in the energy market.

Mr. NALLEY. Alright. So I would actually defer to some of the policy parts of the Department of Energy to respond to that question.

Senator HOEVEN. Alright, then I would ask Mr. Turk that same question, as far as his thoughts on it.

Mr. TURK. What's going on around the world is many countries are taking advantage of the price being low to fill up their strategic reserves and certainly companies are with their commercial reserves. So just a few numbers for you from other countries. For China, our implied stock calculations show 1.2 billion barrels of crude oil stocks at the end of May. This year alone, January to May, that's 200 million barrels that they've added. India was fortunate to have some available strategic storage capabilities as well and their Minister just announced that they're adding 20 million barrels to their strategic stocks in April and May. So certainly countries are looking at the price points and the opportunity to add to their strategic reserves. So that's what we see internationally.

Senator HOEVEN. Also, Mr. Macchiarola, your opinion on the same question.

Mr. MACCHIAROLA. Yeah, thanks for your question, Senator.

We thought it made a lot of sense for the Department of Energy to cancel their planned sell during this, during the outset of this, the COVID-19 pandemic and then put it on offer for leasing, ultimately 23 million barrels of capacity in the Strategic Petroleum Reserve. I believe 15 of that has already been leased. That made a lot of sense for them to utilize their existing authorities that the Department had and, you know, to mitigate against what was, as I noted, a significant imbalance, a potential real issue with respect to storage down, coming down the pike. You know, we encourage the Department to continue to look at this. In addition to the testimony from IEA regarding the storage response from other countries, I do note that this issue has been alleviated by both the storage measures that have been taken, as well as the rebalancing of demand over this period of time.

I appreciate your question and am happy to look at this further as well.

Senator HOEVEN. Alright. I would like to go back to Mr. Nalley and ask about coal-fired electric capacity. Obviously we have seen, and you project, a reduction in coal production and usage correlating with the COVID epidemic and so forth. My question would be, do you believe that the early closure of coal-fired, baseload electric plants that we are seeing will have a lasting impact on reliability in terms of the grid as demand returns?

Mr. NALLEY. So, as you said, we do show a decline and we don't think that it will have a, sort of, an issue on, from a reliability standpoint. There are enough things in place where plants have to go in and get authorization to do, so we don't think it has a long-term effect on reliability.

Senator HOEVEN. Alright.

And what about the impact, as far as developing carbon capture, an impact there? I address that one to Mr. Turk, in our efforts to develop carbon capture technologies.

Mr. TURK. So we certainly view CCUS technology—carbon capture, utilization and storage—as a critical technology for the power sector but for industrial applications as well. And we, we're very pleased to see some real momentum and progress over the last several years and certainly a big congratulations to those of you involved in the Senate and the 45Q legislation which was a real bright spot for CCUS with projects coming online and really providing an incentive in a very powerful way.

Candidly, what we're seeing going into COVID is there are some challenges, there are some new challenges on the CCUS side. And it's certainly incumbent upon countries who view CCUS as a priority and, again, we certainly do, as a critical part of a clean energy future to take that into account as they craft legislation and look for programs to make sure that momentum going into the COVID crisis continues and goes forward coming out of the crisis as well.

Senator HOEVEN. And so, by developing CCUS—very important in terms of addressing CO₂, what about not only utilizing the 45Q or 48A tax credits but what if they were to be—funded, wouldn't that also help—carbon capture—

Mr. TURK. So certainly there's more room for creativity and expanding, from our perspective, the 45Q legislation's reach in a variety of different kinds of ways and from our perspective, again, given the potential, the real potential on CCUS, certainly, whether it's the U.S. Government or other governments and we've heard a lot from other governments very interested in what's going on in the U.S. on 45Q and some of the implementation along those lines. So our hope is there's not only creativity in expansion on the U.S. side but that others learn from your example as well and put in place some schemes and systems that will help CCUS along and especially even more important now in the COVID crisis and coming out of the COVID crisis.

Senator HOEVEN. Thank you. Thank you, Madam Chairman.

The CHAIRMAN. Thank you, Senator Hoeven. I don't know if Senator McSally is back online yet. If she is, we will turn to you. I don't see her up on the screen yet, so I have one more set of ques-

tions, then I think we will turn to Senator Manchin. If Senator McSally comes in, we will move over to her.

Mr. Turk, you mentioned the role that I have, and I am very pleased to be involved with the Global Energy Efficiency Project through the IEA. Ms. Jacobson, you also indicate in your testimony that it was in the energy efficiency side that we really saw probably the most significant, in terms of job hits out there. Ms. Jacobson, you mentioned that more can be done with LIHEAP, particularly, that could make a difference in how we can help with recovery efforts here on the efficiency side. So a question to you. If there were other areas that we might be looking to, I would pay pretty close attention to what is going on with the Weatherization Assistance Program. So your thoughts on what more we might be able to do. Then I would like to turn to you, Mr. Turk, from the international perspective, in terms of some of the areas of energy efficiency that we are seeing reflected in other countries as they also are seeing this impact in this COVID or post-COVID environment.

So Ms. Jacobson and then Mr. Turk.

Ms. JACOBSON. Thank you and yes, unfortunately energy efficiency workers, in particular in the residential sector, have been among the hardest hit when it comes to U.S. energy job losses. And in terms of the policy ideas that our members have brought forward, they try to tackle different classes so it might be, you know, commercial and industrial and things that we can do at the residential level and there are different policy tools for different outcomes that we're seeking.

But in terms of, you know, broad-based, in addition to RD&D and, again, we've talked about the legislation that you've led, the American Energy Innovation Act before, so in addition to that, things like expanding state energy programs that are administered by the state energy offices in partnership with governors are critical. We know this works, and I'm happy to engage with your staff with more detail. There are many programs that can be, again, there may be current existing authorities or in other cases, you know, we have proven results so that we can quickly get those programs moving and that will bring energy efficiency workers back.

You know, there was an initiative that's a relatively new proposal but builds on that model that tries to address critical infrastructure in buildings but also takes advantage of public-private partnerships. And I think no matter what we do with federal dollars, we need to be looking either directly or indirectly to be leveraging private capital. So I encourage that. There are also small business retrofit programs in the efficiency sector that are being considered. So there's a—and then finally the tax code. I mentioned one, just one, of many tax provisions that industry feels would help get energy efficiency workers back on the job.

The CHAIRMAN. Great. Thank you.

Mr. Turk, your comments?

Mr. TURK. Well, first, Madam Chairman, let me certainly reiterate our thanks from the IEA side for your leading role in the Commission on Urgent Action for Energy Efficiency. And as you know the recommendations from that Commission are coming out next week. So we very much hope that those high level, actionable

recommendations that you and your other members of the Commission put together are incredibly helpful here, and I think incredibly timely report to come out.

Secondly, as you also know and I think others, members of the Committee, certainly globally we weren't doing as well on efficiency as we should have been going into the crisis. The efficiency improvements, our economy globally is still getting more efficient but it's not nearly at the rate we were improving just a few years ago. So we had some efficiency challenges going into the crisis and we're seeing some challenges, as I said, on the investment side, 10 to 15 percent less investment in energy efficiency we're expecting this year in 2020 because of the COVID crisis. Now the good news here is exactly what my fellow panelist just said, certainly with stimulus programs, economic recovery programs. And when I use that term, I don't just mean our country is going to do one stimulus program and move on. It's all the related legislation, the tax legislation, procurement, all the other kinds of things, including in your excellent American Energy Innovation Act. But energy efficiency has a huge number of jobs associated with it and done right, especially building up and scaling up existing programs, can be hugely beneficial, especially on the jobs front, but the economic growth and then building toward the energy future we all want.

One area in particular is certainly buildings. Buildings have a huge amount of improvement. We have made improvement over years, but there's a whole lot more improvement and potential there, very cost-effectively. So there's a real opportunity to scale up those efforts, in particular.

Thank you.

The CHAIRMAN. Great. Thank you for that.

I have one final question here, and this is directed to both you, Mr. Nalley, and Mr. Turk. We have thrown some numbers out here and some percent of decline and some projections out there, but we recognize that the EIA and the IEA, you know, you come before this Committee quite frequently because the work that you do is really key to us understanding our global energy markets. It has been noted that there are, oftentimes, differences between the estimates, for instance, for declining U.S. oil production that are published in your respective agencies. The question is, what explains the differences between such estimates and what is the limitation in terms of the data that is available to you, specifically on the question of U.S. oil production declines?

Mr. Nalley, if you want to take it first?

Mr. NALLEY. Well, I'd, I think we would actually have to get back to you, Senator, with the comparison of those numbers. I know IEA issued a report today in trying to take a look at those and what the differences are and particularly in those areas.

The CHAIRMAN. And as to limitations in any data that you might have available to you, is that something that the Committee needs to be aware of or working on?

Mr. NALLEY. I don't think there's any limitations currently in comparison of the IEA's data, no.

The CHAIRMAN. Okay.

Mr. Turk, your comments?

Mr. TURK. Well, first of all, let me certainly emphasize that we have a huge amount of respect for EIA. I worked at the Department of Energy for several years before taking up this post at the International Energy Agency, and our acronyms are quite similar and usually our data is very similar as well. There are some differences as you said, Madam Chair, Chairman, including our estimates for oil being slightly greater declines in 2020 compared to the EIA data. And when we look at the numbers, the real difference there in the forecast can be explained by various assumptions that we use, and EIA uses, on timing of the reversal of production, shut-ins, as well as investment levels and drilling completion activity going forward. So there are some differences there as we look at the numbers and crunch the numbers respectively.

To your second question on the limitations in the data, coming from the U.S. side, the official consolidated monthly data for U.S. production is currently available only through March and certainly March was a long time ago. March seems like several lifetimes ago during this pandemic, at least to me, it certainly does and certainly one part of that is the complex nature of the U.S. oil landscape. So you've got numerous upstream, downstream, midstream players, expensive inter-regional, international trade so the production estimates are certainly challenging, but certainly from our end, we're a data and a numbers organization, as you know, from the many times Dr. Birol has testified before your Committee and the better numbers, the more timely numbers policymakers can then base better decision-making on.

So we'll continue to work with our EIA colleagues certainly and more than happy to continue being as helpful as we can to this Committee, in particular.

The CHAIRMAN. Thank you, Mr. Turk, for your very helpful response there.

Let me turn to Senator Manchin for any final questions that he might have.

Senator MANCHIN. I just have one question, and this is to Mr. Turk or Mr. Nalley.

Since nuclear power plants are still operating, the need to refuel these plants has not gone away. Refueling takes place about every 18 months and requires temporary crews of about 1,000 traveling contract workers. Nuclear power plants in the U.S. have been taking steps to mitigate risks for their permanent staff by halting travel, expanding telework, canceling events and testing essential staff for Coronavirus. But for refuels, temporary contractor workers must work onsite and often perform functions that require close proximity to others. So my question would be what actions are other countries taking to mitigate risk associated with nuclear power plant refueling operations and have you seen any differences between countries, how they have safely dealt with refueling operations, particularly practices that appear to be working very well and being very effective?

So Mr. Turk, if you might want to take that first?

Mr. TURK. Thank you very much, Ranking Member Manchin, and certainly I know my boss, our Executive Director, Dr. Fatih Birol, enjoys his conversations with you as he enjoys his conversa-

tions with the Chairman as well. So whatever we can do to help you and your staff going forward, we're here for you.

As we look at nuclear, we put out a piece not too long ago, in fact, just a week ago, last week, last Friday. Nuclear plants are performing quite well during the lockdowns from an operational viewpoint around the world. They have provided that electricity, that baseload electricity, the electricity that's so important for the medical responses, so important for teleworking, so important for this video conference capability as well. So from an operational standpoint, nuclear has performed quite well.

The issue that we're particularly worried about and we've done some significant analysis of this last year and we're looking into this further as well, is really the decision of advanced economies for lifetime extensions. And I'll just leave you with one data point on that front. Without the investment to extend the life of the existing fleet, our analysis shows as much as two-thirds of nuclear power capacity in advanced economies could be gone by 2040. So that's a huge amount of baseload power, huge amount of carbon, low-carbon, carbon-free, baseload power as well and something that we've tried to bring attention to also.

Senator MANCHIN. Mr. Nalley, if you have anything else?

Mr. NALLEY. I don't have anything else to add. I mean, we can take a look and we would be happy to work with your office and your staff to—

Senator MANCHIN. Anything you can supply to us or give us information on what is happening around the world, we would be very much interested in and very helpful.

Mr. NALLEY. We certainly will.

Senator MANCHIN. Thank you so much. Thank you all for your appearances today and your testimonies. Thank you.

The CHAIRMAN. Thank you, Senator Manchin.

I want to thank our witnesses. I think that this has been a good hearing. We had good input from members and good input from our witnesses.

Mr. Nalley, you have indicated that you have some responses that you will get back to colleagues. We will look forward to that. I know several have asked that questions be submitted for the record, so we will await those responses as well.

But know that as we move forward here in the Congress in addressing what this next round of relief might look like, the efforts to stimulate the economy and allow us to move to a more robust and healthier environment, we need everybody participating in this. So having this discussion, not only about the numbers, but what is happening in the industry and, certainly, the consumer view, has been good input for the Committee here this morning.

I appreciate all that you have provided us and thank you for the contributions.

With that, the Committee stands adjourned.

[Whereupon, at 12:03 p.m. the hearing was adjourned.]

APPENDIX MATERIAL SUBMITTED

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Mr. Stephen Nalley

QUESTIONS FROM CHAIRMAN LISA MURKOWSKI

Q1. How have the Energy Information Administration's estimates of declining U.S. oil production evolved since the onset of the pandemic?

A1. The U.S. Energy Information Administration (EIA) issues an updated forecast each month in our *Short-Term Energy Outlook* (STEO). U.S. oil production has come down faster than we initially forecasted as our data indicated U.S. oil producers were responding more quickly than in the past to falling oil prices by temporarily shutting in high volumes of production. In addition, there were dramatic declines in rig counts.

In our January STEO, we forecasted U.S. crude oil production would average 13.3 million barrels per day in 2020, compared with our April STEO in which we forecasted an average of 11.8 million barrels per day. Revisions since April have generally been smaller, with our July STEO forecasting U.S. crude oil production would average 11.6 million barrels per day in 2020. Note that forecasts of U.S. oil production remain subject to heightened levels of uncertainty in the current situation.

Q2. Do the EIA's estimates of declining U.S. oil production align with estimates published by the International Energy Agency and the private sector?

A2. The EIA and the International Energy Agency (IEA) regularly exchange data and our estimates of crude oil and other liquids production are fairly well aligned in terms of the general trends. Production volume estimates differ by about 400 thousand barrels/day on average for 2020, with the IEA currently forecasting a larger decline than EIA. The forecasts for the first quarter of 2021 differ on average by about 500 thousand barrels/day, with the IEA projecting more production.

Differences in forecasts can be attributed to a combination of differing input assumptions, the underlying model and its parameters. For example, forecasts of U.S. oil production are highly sensitive to expectations of oil prices—which depend on expectation of OPEC+ production behavior, gross domestic product (GDP) growth, and consumer behavior changes beyond the historical GDP relationships—the rate curtailed wells resume production, and whether additional adjustments and assumptions are made for producer contracts, hedging, free cash flow, and risk position.

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Mr. Stephen Nalley

Q3. What accounts for the differences between the EIA's estimates of declining U.S. oil production and those estimates published by others?

A3. EIA and most other forecasters do not anticipate increased crude oil production curtailments in the future at current and forecasted crude oil prices.

The difference in forecast details can be attributed to a combination of differing input assumptions, the underlying model and its parameters. For example, forecasts of U.S. oil production are highly sensitive to expectations of oil prices—which depend on expectation of OPEC+ production behavior, GDP growth, and consumer behavior changes beyond the historical GDP relationships—the rate curtailed wells resume production, and whether additional adjustments and assumptions are made for producer contracts, hedging, free cash flow, and risk position.

In addition, current production declines and curtailments we publish in the STEO are estimates. For example data published on June 30, 2020 in EIA's *Petroleum Supply Monthly* (PSM) are data from EIA's 914 Survey, which reflect reported production data through April 2020. The most recent data are incorporated into EIA's forecast in the STEO. Data beyond April 2020 are estimates. EIA revises its forecasts monthly as additional data become available.

Q4. What limitations does the EIA face in estimating declining U.S. oil production?

A4. The main limitations in estimating U.S. oil production are the large uncertainties related to the length and scale of the current pandemic, which impact the outlook for oil prices and in turn U.S. oil production.

In terms of estimating recent (May and June) U.S. oil production and future production in the next few months, EIA is limited by the lack of comprehensive real-time and recent production data. The most reliable production information are data that EIA collects in the EIA-914 survey. However, these production data are lagged by two months due to the response time required by producers and state agencies.

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Mr. Stephen Nalley

In the absence of production data, EIA's analysis relies on expert judgment informed by ongoing discussions with state oil and gas agencies and oil producers, examination of regional pipeline data, and analytic engagement with other industry analysts. The most comprehensive real-time data that inform analyst judgement are drilling rig counts and benchmark commodity prices (e.g., West Texas Intermediate (WTI)). EIA combines this information to produce regional production estimates in the *Drilling Productivity Report* (DPR) to forecast production one month into the future (DPR released in June gives forecast through July), however, the DPR does not provide a comprehensive forecast for total U.S. oil production. The EIA STEO currently provides a forecast for total U.S. oil production through December 2021.

Variations in individual well initial production rates, producer hedging strategies, service contracts, and limited crude oil pipeline flow data require significant data smoothing to identify true trends in the noisy data.

Q5. What is the difference in methodologies between the monthly estimates of declining U.S. oil production that are published in the EIA's Short-Term Energy Outlook and the EIA's national consolidated statistics, which do not appear to have been updated since March 2020?

A5. The national consolidated statistics are a historical data series published in the *Petroleum Supply Monthly* (PSM) and based on the EIA-914 survey. The PSM estimates for historical production are based on the EIA-914 survey and administrative data from state agencies, and are considered the most comprehensive and reliable estimate of U.S. crude oil production. The survey data lag by two months (i.e., April production estimates will be published in the June 30, 2020 PSM) because operators and states provide reports for their monthly activity 40 days after the month's end.

The *Short-Term Energy Outlook* (STEO) is a modeled forecast that is updated monthly. Every month, the most recent PSM production data are incorporated into EIA's forecast in the STEO, which also includes published estimates of the past two months of production and a forecast through the next calendar year, currently December 2021. The STEO lower 48 onshore production model takes into account WTI crude oil prices at Cushing, OK and other regional crude oil and natural gas benchmark prices, rig counts, well-level data from state agencies, EIA's *Drilling Productivity Report*

**U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Mr. Stephen Nalley**

(DPR), industry financial filings/trade press, and other factors. EIA staff estimates the STEO production forecast for Alaska and the Federal Gulf of Mexico separately.

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Mr. Stephen Nalley

QUESTION FROM RANKING MEMBER JOE MANCHIN III

- Q1. In the joint explanatory statement for the FY20 appropriations bill, Congress provided \$1.7 million for the Department of Energy's Office of Policy to complete a U.S. energy employment report and directed the Department to produce and release this report annually. Is EIA involved in producing this report? If so, please describe EIA's role.
- A1. EIA no longer produces this report and we respectfully refer Ranking Member Manchin to the Department of Energy's Office of Strategic Planning and Policy on questions regarding the energy employment report.

U.S. Senate Committee on Energy and Natural Resources
 June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
 Questions for the Record Submitted to Mr. Stephen Nalley

QUESTIONS FROM SENATOR BILL CASSIDY

Q1. Mr. Nalley, EIA projects demand will recover quicker than supply but U.S. production will decline until next spring. This suggests there could be greater drawdowns of U.S. storage capacity as demand recovers. How much further production does EIA forecast will be taken offline by domestic producers?

A1. Given current crude oil prices and EIA's price forecast, we do not anticipate further production curtailments (i.e., wells partially or completely shut-in) at this time. Several companies that announced production curtailments in March and April 2020, have announced reversals of those curtailments. WTI crude oil prices at \$35 per barrel or above provide sufficient incentive for some U.S. producers to continue to produce crude oil. Commercial data providers that are monitoring oil company announcements and activity on specific pipelines have estimated that one quarter to one third of the curtailed production has been brought back online. EIA assumes that nearly all curtailed wells will resume production by December 2020.

However, curtailments are not the only source of crude oil production declines. EIA also includes well completion deferrals and reduced drilling rig activity that reduced U.S. crude oil production by roughly 1 million barrels per day, in our estimates.

EIA estimates U.S. crude oil production fell from a record 12.9 million b/d in November 2019 to 11.0 million b/d in June 2020. EIA expects that U.S. crude oil production will continue its decline to 10.9 million b/d in July 2021, then increase slightly through the end of 2021.

Q2. Which basins are most vulnerable to further production cuts?

A2. The Permian is the U.S. region most vulnerable to further production declines. It has experienced the largest decline in active drilling rigs, from 418 in March 2020 to 148 in May 2020. The Permian region was producing 4.8 million b/d, or 38% of all U.S. crude oil production, in March 2020, and EIA expects that it will produce 4.3 million b/d in July 2020, as published in EIA's *Drilling Productivity Report*.

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Mr. Stephen Nalley

EIA forecasts that the Eagle Ford will decline from 1.4 million b/d in March 2020 to 1.2 million b/d in July 2020. Recent pipeline capacity additions from the Eagle Ford to the Gulf Coast have mitigated past pipeline congestion through Cushing, OK, and provided more direct exposure to Brent oil prices than to Midland, TX and Cushing, OK oil prices.

The Bakken region declined from 1.4 million b/d in March 2020 to 1.1 million b/d in May 2020, due to extensive well curtailments. However, these curtailments are already being lifted, and EIA forecasts that production increases to about 1.2 million b/d in June and July 2020.

- Q3. EIA's June 5th Weekly Petroleum Data summary noted crude oil inventories recently increased 5.7 million barrels and were overall much higher than this time one year ago. If there is a resurgence of COVID-19 cases later this year, what impacts does EIA believe this will have on crude inventories and oil prices, assuming storage levels are still higher than pre-COVID and oil prices still lower than earlier this year?
- A3. The effect of a resurgence of COVID-19 cases later this year on crude oil inventories and oil prices will depend on government actions, such as travel restrictions and stay-at-home orders, or consumer decisions on such things as self-isolation and travel. Should these actions cause oil consumption to decline, oil inventories would likely rise and oil prices would likely decline. In the June STEO, EIA forecast that the Organization for Economic Co-operation and Development (OECD) commercial crude oil and other liquids inventory levels would decline steadily from current levels, decreasing each quarter from the third quarter 2020 through the fourth quarter 2021. EIA updates its STEO forecast each month to reflect the most current market conditions.
- Q4. How will the decline of crude oil production affect associated gas production and do you see associated gas rebounding to the levels seen before COVID-19?
- A4. In the Permian region, where the largest share of U.S. associated gas is produced, EIA does not expect associated gas production to recover to pre-COVID 19 levels through 2021 under the current oil price forecast. The Permian region was producing 17.1 billion cubic feet per day (bcf/d) of gross natural gas in March 2020, and EIA forecasts that it will produce 16.0 bcf/d in July 2020.

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Mr. Stephen Nalley

Across the tight oil regions analyzed in EIA's *Drilling Productivity Report*—Permian, Eagle Ford, Bakken, Anadarko, and Niobrara—total gross natural gas production was 40.4 Bcf/d in March 2020. EIA forecasts that production will total 36.3 bcf/d in July 2020. A large portion of this production is associated gas.

- Q5. Do you see a decline in associated natural gas as an opportunity for dry gas basins, such as the Haynesville, to increase their production?
- A5. A decline in associated natural gas production combined with stable or increasing domestic natural gas consumption and liquefied natural gas (LNG) exports, will generally lead to higher natural gas prices and greater incentives to produce gas in dry gas basins such as the Haynesville. Gross gas production in the Haynesville region peaked at 12.3 bcf/d in December 2019 following a decline in Henry Hub spot natural gas prices since November 2019. EIA expects Haynesville production will resume growth in the fall of 2020 when spot prices begin to rise.

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Mr. Stephen Nalley

QUESTIONS FROM SENATOR CATHERINE CORTEZ MASTO

- Q1. According to recent jobs reports and analysis, the clean vehicles industry has seen an 18.3 percent decrease in employment from its pre-pandemic level for a total of 46,500 lost jobs thus far. Various countries, including China, Europe and Canada, are investing in zero-emissions transportation in an effort to build back their economies and respond to the future of global consumer demand as the world works to reduce transportation emissions, which have a compounding impact on communities already suffering from COVID-19.
- Q1A. How essential is it for Congress to match these efforts and invest in our domestic automotive industry, to ensure that the U.S. is ready to compete in the zero-emissions vehicle market globally and support industry jobs?
- A1A. EIA's current analyses, forecasts, and projections on this subject assume current laws and regulations remain in place. EIA has not conducted analysis on the effect of potential legislation.
- Q1B. Is legislation the best route to expand and extend incentives to individuals to accelerate electric vehicle adoption and rapidly deploy charging infrastructure will help the U.S. build back, better and stronger?
- A1B. EIA's current analyses, forecasts, and projections on this subject assume current laws and regulations remain in place. EIA has not conducted analysis on the effect potential legislation may have in expanding and extending incentives to accelerate electric vehicle adoption in the United States.
- Q2. According to the Solar Energy Industries Association, one-third of new residential solar systems and one-quarter of new nonresidential solar systems will be paired with energy storage by 2025.
- However, the pandemic is hitting the energy storage industry, which employed more than 60,000 people in the U.S. last year, hard. The Energy Storage Association recently reported that COVID-19 has contributed to project delays, layoffs, and revenue shortfalls.
- Q2A. How can Congress provide security to these important industries that will help build the resilient and efficient energy systems we need?
- A2A. EIA has not conducted analysis on the effect new legislation may have on the energy storage industry.
- Q3. Prior to the pandemic, nearly 3.4 million Americans worked in the clean energy industry. As such, the Bureau of Labor Statistics projected in 2019 that the country's two fastest growing jobs over the next decade would consist of solar panel installers and wind turbine technicians.

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Mr. Stephen Nalley

Q3A. How should the federal government tailor national recovery efforts to ensure the pandemic does not stifle clean energy growth and works to boost workforce readiness in the clean energy industry?

A3a. EIA has not conducted analysis of potential role the federal government may play in national recovery efforts in the clean energy industry.

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Mr. David Turk

Questions from Ranking Member Joe Manchin III

Question 1: Greenhouse gas emissions have dropped as a result of the pandemic, but are expected to rebound as we reopen and rebuild our economy. Our committee has been working over the last year and a half to develop energy innovation solutions that will help to combat climate change and provide the first update to energy policy in over a decade. Do you believe that enacting the bipartisan policies contained in our American Energy Innovation Act would help position us to reduce emissions and rebound from the impact of the pandemic?

Yes. The IEA has undertaken two major pieces of analysis recently that support the importance of the kinds of measures in the American Energy Innovation Act.

In response to calls from governments around the world, the IEA released a Sustainable Recovery Plan in June. This detailed plan highlights cost-effective measures spanning six key sectors – electricity, transport, industry, buildings, fuels and emerging low-carbon technologies. The plan, developed in cooperation with the International Monetary Fund, would boost global economic growth by 1.1% per year, save or create 9 million jobs per year, and avoid a rebound in emissions and put them in structural decline. Achieving these results would require global investment of USD 1 trillion annually over the next three years.

In July, the IEA released our Energy Technology Perspectives Special Report on Innovation. This analysis specifically highlights the importance of a robust innovation agenda for reaching net-zero emissions. It highlights the importance of urgently developing new, affordable technologies that enable deep electrification, carbon capture for use and storage, and the use of hydrogen and several forms of bioenergy.

Both of these major pieces of IEA analysis strongly support the importance of measures included in the American Energy Innovation Act, and underscores the measures' importance in reducing emissions and helping the U.S. economy to rebound from the impact of the Covid-19 pandemic.

Question 2: In the context of the pandemic and its impacts on the energy sector, can you share lessons you are learning that we could apply to the longer-term but equally difficult climate problem?

The pandemic has had an unprecedented impact throughout global energy systems, including an expected 6% decrease in energy demand globally. Governments are responding to the economic crisis on a massive scale, focusing on boosting economies as well as preserving and creating jobs. In the context of these stimulus packages, governments also have an opportunity to simultaneously put clean energy at the heart of Covid-19 recovery, accelerate clean energy transitions and help place the world on a trajectory in line with international climate goals.

Both the Covid-19 and climate change crises underscore the interconnectedness of the world and the need for actions by all countries and peoples. Both crises also underscore the urgency of action and the need for sustained commitment.

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Mr. David Turk

Questions from Senator Catherine Cortez Masto

Question 1: Mr. Turk, in your written testimony, you noted an expected drop in global energy investments due to the pandemic. You went on to say that, “The slowdown in spending on key clean energy technologies also risks undermining much needed transitions to more resilient and sustainable energy systems.”

A loss in investments in the clean energy sector is especially concerning for states, like Nevada, that are striving to meet ambitious renewable energy targets and as the nation fights back against the climate crisis.

- A. What role can an extension to renewable energy Investment Tax Credits play in staving off the serious implications of energy security and a clean energy transition?

Our latest World Energy Investment report concludes that disruption from the Covid-19 pandemic is expected to push global energy investment in 2020 down by 20%, or almost \$400 billion, with all parts of the world impacted. Our analysis has also consistently shown the need for much higher levels of investment in a variety of critical clean energy technologies in order to achieve global climate and sustainability goals.

Tax credits have been used in the United States and in other countries as a very powerful tool to spur greater investment in critical clean energy technologies. Such mechanisms can also play a helpful role in the future to both accelerate clean energy transitions and to improve resilience and energy security.

- B. Are there other ways for the U.S. to further promote investments in the clean energy sector?

Yes. In response to calls from governments around the world, the IEA released a Sustainable Recovery Plan in June. This detailed plan highlights cost-effective measures spanning six key sectors – electricity, transport, industry, buildings, fuels and emerging low-carbon technologies. The plan, developed in cooperation with the International Monetary Fund, would boost global economic growth by 1.1% per year, save or create 9 million jobs per year, and avoid a rebound in emissions and put them in structural decline. Achieving these results would require global investment of USD 1 trillion annually over the next three years.

Question 2: You concluded your written testimony by mentioning that the International Energy Association (IEA) will soon be releasing a “World Energy Outlook Special Report on Sustainable Recovery.”

You foreshadowed that this Special Report will provide actionable recommendations on how governments can put energy and sustainability at the heart of stimulus plans to create jobs and build more modern, resilient, and clean energy systems.

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Mr. David Turk

- A. From your perspective, what are the most beneficial actions being taken by other countries right now to mitigate the negative effects of the pandemic on the energy sector?

The IEA Sustainable Recovery Plan draws upon cutting-edge analysis on what has worked in the past by governments from around the world and measures that are currently being successfully deployed. The plan sets out 30 actionable, ambitious policy recommendations and targeted investments. 35% of new jobs would be created through energy efficiency measures and another 25% in power systems, particularly in wind, solar and modernizing and strengthening electricity grids.

Question 3: According to the Solar Energy Industries Association, one-third of new residential solar systems and one-quarter of new nonresidential solar systems will be paired with energy storage by 2025.

However, the pandemic is hitting the energy storage industry, which employed more than 60,000 people in the U.S. last year, hard. The Energy Storage Association recently reported that COVID-19 has contributed to project delays, layoffs, and revenue shortfalls.

- A. How can Congress provide security to these important industries that will help build the resilient and efficient energy systems required for a clean future?

The Covid-19 pandemic has created a historic crisis for economies and energy markets. The biggest global economic shock in peacetime since the 1930s is having a severe impact on employment and investment across all sectors, including energy. With the global economy set to shrink by 6% in 2020, some 300 million jobs may have been lost during the second quarter of this year. The disruption has sent shock waves through energy markets, with global energy investment expected to shrink by an unparalleled 20% in 2020. As you note, the energy storage industry has been greatly impacted.

Governments are responding to the economic crisis on a massive scale. In our IEA Sustainable Recovery Plan, we specifically highlight the importance of accelerating investments in wind and solar PV deployment, especially given their short construction times, declining costs, and for solar PV, the large numbers of jobs it can create. We also highlight the importance of strengthening electricity networks, including the use of storage, especially to allow operators to integrate higher shares of variable renewables and to lead to long-term reduction in consumer bills. Government and private sector investment in energy storage can boost economies, maintain and create jobs, and, at the same time, accelerate clean energy transitions.

U.S. Senate Committee on Energy and Natural Resources
 June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
 Questions for the Record Submitted to Ms. Lisa Jacobson

RESPONSE BY LISA JACOBSON, PRESIDENT, BUSINESS COUNCIL FOR SUSTAINABLE ENERGY
July 2020

Questions from Ranking Member Joe Manchin III

Question 1: Greenhouse gas emissions have dropped as a result of the pandemic, but are expected to rebound as we reopen and rebuild our economy. Our committee has been working over the last year and a half to develop energy innovation solutions that will help to combat climate change and provide the first update to energy policy in over a decade. Do you believe that enacting the bipartisan policies contained in our American Energy Innovation Act would help position us to reduce emissions and rebound from the impact of the pandemic?

Response: Yes. BCSE members urge action on the American Energy Innovation Act (AEIA) this year as a foundational set of policies with strong bipartisan support that will spur investment and create jobs. The AEIA is a process-driven, consensus-based piece of legislation that includes more than 50 energy-related bills reported on a bipartisan basis by the Senate Committee on Energy and Natural Resources. It includes a range of RD&D initiatives to deploy current technologies and invest in innovative technologies. To make progress on COVID-19 recovery, economic development, grid modernization, technology innovation and climate change, AEIA should be enacted immediately.

Question 2: In the context of the pandemic and its impacts on the energy sector, can you share lessons you are learning that we could apply to the longer-term but equally difficult climate problem?

Response: The pandemic both shows both the strength of U.S. energy system and the need to increase investment in energy system resilience and modernization. As I noted in my testimony, the energy system was the backbone of our COVID response this spring, as it provided essential service to front-line workers and health care facilities and also supported critical facilities and households during stay at home orders. As we look at the challenges of this pandemic and other physical and cyber threats the country faces, investment in energy infrastructure is essential.

Question from Senator Mazie Hirono

Question: I have been a long-time proponent of grid modernization technologies because of the benefits they can bring in terms of lower energy bills as well as making it easier to add more variable renewable power sources like solar. You discussed some of the “stimulative effects” of the renewable energy industry on the economy, including job creation and more. Can you describe some of the benefits of grid modernization technologies and their importance to facilitating the integration of renewable energy sources with the electric grid, particularly the ability to help create clean energy development and jobs?

Response: Yes, grid modernization technologies indeed are vital to facilitating the integration of renewable resources with the grid. Therefore, the economic development and “stimulative” effects associated with renewable energy would benefit greatly from, if not ultimately depend on, the deployment of grid modernization technologies. More specifically, these technologies and capabilities help increase visibility into

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Ms. Lisa Jacobson

RESPONSE BY LISA JACOBSON, PRESIDENT, BUSINESS COUNCIL FOR SUSTAINABLE ENERGY
July 2020

the grid to help discover any anomalies with the load; and, they facilitate optimization of the grid (and balancing and optimizing the load on the grid), which can be particularly helpful with intermittent resources.)

In my testimony, I discussed some of the negative impacts from job loss in the renewables industry during this COVID-19 pandemic, as well as the associated benefits from the renewables industry in terms of job creation and economic development prior to this point.

Because grid modernization technologies are so important to integrating renewable energy resources with the grid as reliably, effectively, and efficiently as possible, as we deploy more renewable resources, I would fully expect there to be economic development and job creation opportunities for the grid modernization industry associated with deploying more renewable resources.

We know from the 2009 stimulus program, that grid modernization projects helped create 47,000 new jobs overall (direct and indirect) in the first 2-plus years alone and helped spur billions of dollars in economic development – nearly \$7 billion (or more) in economic output for the initial \$3 billion in investment – so, a real “multiplier” effect on the economy.

In fact, since the grid modernization and renewable energy industries have advanced quite a bit since 2009, I believe we could expect comparable – *and likely far higher* – economic development and job creation results for both industries.

More specifically: not only are there job creation and economic development opportunities associated with the grid modernization technologies in and of themselves as you noted, but, these technologies will also have a further “ripple effect” across the broader clean energy industry and will help boost job creation and economic development across the industry.

We also know that more needs to be done to help grid modernization realize its full potential. A 2011 EPRI report cited the future need for \$17-24 billion in annual investments over a 20-year period, i.e., through 2030, or \$338-\$476 billion total to implement a fully functional smart grid” and that this could result in benefits that yield between \$1.3 trillion and \$2 trillion.”¹

¹ Electric Power Research Institute (EPRI), “Estimating the Costs and Benefits of the Smart Grid – A Preliminary Estimate of the Investment Requirements for a Fully Functioning Smart Grid” (Report # 1022519) available at: <https://www.power-grid.com/2011/04/07/epri-does-cost-benefit-analysis-for-smart-grid/>.

U.S. Senate Committee on Energy and Natural Resources
 June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
 Questions for the Record Submitted to Ms. Lisa Jacobson

RESPONSE BY LISA JACOBSON, PRESIDENT, BUSINESS COUNCIL FOR SUSTAINABLE ENERGY
July 2020

Questions from Senator Martha McSally

Question 1: Arizona is the #3 solar state in the country with 4,700 megawatts of solar capacity installed. That is enough to power 778,000 homes. The solar industry has cumulatively invested \$12.6 billion into Arizona, and we have hundreds of local companies and thousands of employees dealing with this pandemic and trying to get past it. A new study just published by E2 Environmental Entrepreneurs shows that the clean energy sector in Arizona shed more than 9,200 jobs in Arizona since COVID began. When looking at solar alone, it is projected that the industry will have shrunk by 35% this summer compared to pre-COVID levels.

In all of my meetings with Arizona solar companies, the number one thing they seeking from policy makers is stability. Specifically, they have requested a delay in the phasedown in the Solar Investment Tax Credit for a few years in order to rebuild the industry, rehire employees, and grow more jobs. Would you agree that delaying the phasedown of the ITC would be helpful in regaining and growing solar jobs in Arizona? What other policy proposals might Congress consider that would be helpful in supporting domestic solar energy jobs?

Response: Yes, extending the phasedown of the ITC would help regain jobs in the solar industry in your state as well as others. In addition, providing direct pay mechanisms for the ITC and the PTC would be beneficial to the solar industry. Please see the letter BCSE submitted to Congress on July 20 that offers additional recommendations for Congress to consider to put people back to work and to stabilize clean energy markets.²

Question 2: You testified today that Congress should consider a direct pay mechanism for energy-related investment and production tax credits. Such an approach would help project developers at a time when demand for tax equity is quite low. It could also benefit public power utilities and electric cooperatives – which collectively serve nearly 30 percent of all retail customers, but as tax-exempt entities cannot currently claim either the ITC or PTC.

While Congress should rightly debate the merits and scope an ITC or PTC approach in general, is it your opinion that such provision could benefit customers of all electric power utilities? Is there any reason why such a mechanism should be drafted to exclude certain utilities and, so, their customers?

Response: Yes, if the credits are modified to provide a comparable incentive for municipal electric utilities it will benefit their customers.

For many years there has been strong support for increased energy production from renewable and clean energy resources. Congress has consistently provided taxable utilities with tax incentives for such investments (i.e., PTC and ITC). However, municipal electric utilities are not able to directly access these tax credits and must rely on costly and inefficient third party arrangements to access a small percentage of their value. If Congress made these tax credits fully refundable or transferable, public power utilities could access them and lower the cost of capital improvements which would ultimately result in lower costs to its customers.

² Please see: <https://www.bcse.org/images/2020%20FPC/COVID-19/BCSE%20Letter%20on%20COVID-19%20Response%20July%2018,%202020.pdf>

U.S. Senate Committee on Energy and Natural Resources
 June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
 Questions for the Record Submitted to Ms. Lisa Jacobson

RESPONSE BY LISA JACOBSON, PRESIDENT, BUSINESS COUNCIL FOR SUSTAINABLE ENERGY
July 2020

Municipal electric utilities also support the enactment into law of direct pay bonds (not subject to mandatory sequestration rules) with a sliding scale of subsidy levels that would correspond to the sliding scale of tax credits provided to privately-owned energy companies. Direct-pay bonds broaden the tools available for financing capital costs, thus lowering the costs to customers of municipally-owned utilities. Additionally, direct pay bonds are taxable and the federal subsidy for interest paid on them results in a higher return on investment than traditional tax-exempt bonds. As a result, they are attractive investment options for segments of the investment community such as pension plans and international investors that oftentimes choose not to invest in traditional tax exempt bonds.

Is there any reason why such a mechanism should be drafted to exclude certain utilities and, so, their customers?

No. In fact public power utilities would like to own their own assets, but the inability to directly access the energy tax incentives in question prevents this. Municipal electric utilities support tax policies that allow their systems to build infrastructure, invest in communities and provide reliable service at affordable rates to their 30 million customers. Ensuring that their systems can continue to provide reliable electricity to homes and businesses at competitive pricing while achieving the nation's renewable and clean energy goals is a foundational principle of all municipal electric utilities.

Questions from Senator Catherine Cortez Masto

Question 1: According to recent job reports and analysis, the clean vehicles industry has seen an 18.3 percent decrease in employment from its pre-pandemic level for a total of 46,500 lost jobs thus far. Various countries, including China, Europe and Canada, are investing in zero-emissions transportation in an effort to build back their economies and respond to the future of global consumer demand as the world works to reduce transportation emissions, which have a compounding impact on communities already suffering from COVID-19.

- A. How essential is it for Congress to match these efforts and invest in our domestic automotive industry, to ensure that the U.S. is ready to compete in the zero-emissions vehicle market globally and support industry jobs?

Response: The federal government has a strong role to play to ensure that we reduce emissions in the transportation sector, the largest contributor to greenhouse gas emissions in the U.S.³ Further, as you note, it can help to spur the growing sustainable transportation marketplace with investment and family sustaining jobs.

For example, the bi-partisan America's Transportation Infrastructure Act (ATIA) (S. 2302) was unanimously approved by the Senate Environment and Public Works Committee in July 2019. The legislation authorizes \$287 billion in funding from the Highway Trust Fund for the nation's highway surface transportation programs

³ Please see slide 25 in the *2020 Sustainable Energy in America Factbook*, www.bcse.org/factbook.

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Ms. Lisa Jacobson

RESPONSE BY LISA JACOBSON, PRESIDENT, BUSINESS COUNCIL FOR SUSTAINABLE ENERGY
July 2020

over five years. This represents a roughly 27 percent increase over the levels authorized in the previous legislation, the Fixing America's Surface Transportation (FAST) Act of 2015, which is set to expire in September 2020.

The bill includes a range of programs and funding for resilient and sustainable transportation infrastructure. Specifically, the legislation includes \$3.8 billion over five years in formula and competitive grants to reduce on-road motor vehicle carbon emissions, along with truck emissions at port facilities. In addition, the bill provides \$200 million in competitive grants to relieve congestion in major metropolitan areas. Lastly, ATIA reauthorizes the Diesel Emissions reduction Act (DERA) and directs the U.S. Comptroller General to evaluate the Congestion Mitigation and Air Quality Improvement Act.

Congress should work to finalize legislation to support sustainable transportation and send it to the President's desk this year.

- B. Is legislation the best route to expand and extend incentives to individuals to accelerate electric vehicle adoption and rapidly deploy charging infrastructure will help the U.S. build back, better and stronger?

Building on my response above, tax policy is a vital tool to leverage private investment in sustainable transportation infrastructure and manufacturing. There are a number of tax incentives under consideration to support domestic manufacturing of electric vehicles, including:

- Extend the 30B Alternative Motor Vehicle Credit
- Extend and expand 30C Alternative Refueling Infrastructure Credit
- Expand the 30D New Qualified Plug-in Electric Drive Motor Credit
- Create a Battery Electric Bus Tax Credit

Question 2: According to the Solar Energy Industries Association, one-third of new residential solar systems and one-quarter of new nonresidential solar systems will be paired with energy storage by 2025.

However, the pandemic is hitting the energy storage industry, which employed more than 60,000 people in the U.S. last year, hard. The Energy Storage Association recently reported that COVID-19 has contributed to project delays, layoffs, and revenue shortfalls.

- A. How can Congress provide security to these important industries that will help build the resilient and efficient energy systems required for a clean future?

Response: Congress should extend the phasedown of the ITC and create a stand-alone energy storage ITC.

In addition, Congress should:

- Fully authorize and fund the Grid Energy Storage Launchpad Facility proposed to be constructed at the Pacific Northwest National Laboratory (PNNL).

U.S. Senate Committee on Energy and Natural Resources
 June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
 Questions for the Record Submitted to Ms. Lisa Jacobson

RESPONSE BY LISA JACOBSON, PRESIDENT, BUSINESS COUNCIL FOR SUSTAINABLE ENERGY
July 2020

- This will assist with next-generation energy storage technology innovation and commercialization, in line with the objectives of the DOE Energy Storage Grand Challenge. The White House budget request seeks approximately \$50 million for this facility construction in FY2021; the Energy Storage Association (ESA) recommends a multi-year appropriation to the full expected funding requirement.
- Provide \$600 million in FY2021 in grants for distributed energy resources, including energy storage.
 - This should look for opportunities to include municipal infrastructure and microgrids.
- Direct the DOE to dedicate \$250 million to demonstration projects of energy storage across electric systems.
- Incorporate energy storage as an eligible investment for a renewed version of the DOE Energy Efficiency and Conservation Block Grant (EECBG) Program.
- Incorporate energy storage as an eligible investment for Department of Education programs that promote school construction and renovation.

Question 3: Prior to the pandemic, nearly 3.4 million Americans worked in the clean energy industry. As such, the Bureau of Labor Statistics projected in 2019 that the country's two fastest growing jobs over the next decade would consist of solar panel installers and wind turbine technicians.

A. How should the federal government tailor national recovery efforts to ensure the pandemic does not stifle clean energy growth and works to boost workforce readiness?

Response: As noted in my testimony, the scale and breadth of the economic impacts that clean energy industries are facing is wide and deep. Given the diversity of products, services and business models in clean energy sectors, a range of policy solutions are being considered. As a diverse coalition, not all BCSE members endorse or take positions on all of the policies being considered.

The types of federal solutions being contemplated involve support to states, localities and tribes; adjustments to tax policy; regulatory changes; and funding for research, development and deployment (RD&D) initiatives, among other proposals. The objectives are to provide market stability in this uncertain period and to spur investment and jobs for economic recovery when the time is right.

Question 4: A loss in investments in the clean energy sector due to the pandemic is especially concerning for states, like Nevada, that are striving to meet ambitious renewable energy targets and as the nation fights back against the climate crisis. What role can an extension to renewable energy Investment Tax Credits play in staving off the serious implications of energy security and a clean energy transition?

**U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Ms. Lisa Jacobson**

***RESPONSE BY LISA JACOBSON, PRESIDENT, BUSINESS COUNCIL FOR SUSTAINABLE ENERGY
July 2020***

Response: Extending the phasedowns for the ITC will help stabilize the solar market and send a strong signal to companies to hire workers as the economy moves into a recovery phase. Business operations and supply chains have been interrupted, and project pipelines and construction have been delayed due to the stay at home orders this spring. In response, Congress should consider extending phasedowns of the clean energy and energy efficiency tax measures on the books to ensure they are utilized as Congress intended. Congress should also consider expanding tax measures to support deployment of storage, hydrogen, transportation, manufacturing and other clean energy deployment and resilient infrastructure investments.

Tax policy has been the primary federal clean energy deployment mechanism. The results are clear, and the marketplace responds to predictable and stable financial incentives. For COVID-19 relief and recovery, as well as energy and environmental objectives, the tax code is a critical policy lever with proven results.⁴

⁴ Please see slide 24 of the 2020 Sustainable Energy in America Factbook, www.bcse.org/factbook.

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Mr. Frank J. Macchiarola

Questions from Ranking Member Joe Manchin III

Questions: In 2018, 468 million cubic feet of natural gas was vented and flared. This is a sharp increase from the 281 million cubic feet in 2017.

- Flaring is often used when an oil well produces ancillary natural gas and there is no pipeline infrastructure available to transport it. In these instances, flaring is recognized by the EPA as the safer environmental option. In fact, for new and modified wells, NSPS OOOO(a) requires flaring if there is not the ability to route to a pipeline. Rather than venting the gas into the air, flaring burns the gas, releasing fewer greenhouse gases than venting. Increased pipeline capacity and new industry innovations can help reduce flaring. High-production areas, including the Permian Basin in Texas and New Mexico and the Bakken in North Dakota and Montana, need additional pipeline infrastructure to take away natural gas when it accompanies oil production. More infrastructure could reduce the amount of flaring – regulated, limited burning of methane - that takes place.
- a. What are your members doing to reduce venting and flaring, and what are the results?
- Individual companies throughout the industry are involved in several programs to reduce methane emissions, including industry initiatives such as The Environmental Partnership. These industry actions and programs are focused on key sources of methane emissions in production – expanding progress that has seen emissions relative to production plummet while natural gas and oil output soared.
 - As a result of continued industry innovation across the U.S. oil and natural gas industry, methane emission intensity from petroleum and natural gas systems have decreased 23% between 1990 to 2018, even as U.S. production of oil and natural gas together increased by more than 60 percent over the same period.
 - As a result of continued industry innovation across the U.S. oil and natural gas industry, between 2011 and 2018 methane emission intensity have declined by 67 percent across five of America's large natural gas producing regions – Anadarko, Appalachian, Bakken, Eagle Ford and Permian – even as production has increased 186 percent.
 - One specific example of industry action is that companies in Texas are building thousands of miles of new pipelines. Meanwhile, according to the Texas Railroad Commission, the rate of flaring decreased from 3.5% of excess natural gas in March 2014 to 3.1% in March 2019 – even as production increased to historic levels.
- b. With the detrimental impact COVID-19 has had on the industry, isn't there an opportunity to use methane for a profit instead?
- Low prices and current market conditions have not changed our industry's steadfast commitment to addressing the dual challenge of achieving environmental progress while providing affordable and reliable energy to all Americans. Companies continue to tackle this challenge head on, investing in innovative solutions to capture emissions from their operations.

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Mr. Frank J. Macchiarola

- Evidence shows that natural gas producers are continuing to reduce emissions, despite the challenging market conditions. Flaring in the Permian declined to 700 million cubic feet of natural gas per day during the first quarter of 2020, down from a peak of nearly 900 million cubic feet per day in the fourth quarter of 2019, according to energy research firm Rystad Energy. Rystad expects flaring rates will continue falling during the outbreak.
 - "Such a low level of flaring has not been seen in the Permian since 2012," Rystad Energy Head of Shale Research Artem Abramov said. "While the downturn introduces severe challenges for the overall economics of Permian producers, achieving outstanding emissions targets is at least one bright spot."
- Producers remain focused on reducing emissions and ever-more efficient operations through technology, innovation and industry initiatives – such as The Environmental Partnership.
- c. In your opinion, what is the proper role for the federal government in reducing venting and flaring on public lands?
 - We support smart, cost-effective regulations that, combined with industry-led voluntary efforts, demonstrate progress through continued emission reductions. Effective energy policy can bolster the achievements of industry best practices and innovations along with cost-effective state and federal efforts that are already providing strong environmental leadership.
 - Industry-led progress is taking place and the oil and gas industry has comprehensive regulations to address emissions associated with operation under current state and federal requirements.
 - By 2023, key emission sources of nearly 90% of all U.S. oil and natural gas production will be covered by the EPA's New Source Performance Standards.
 -

Questions from Senator Bernard Sanders

Question 1: President Trump has said on numerous occasions that he believes climate change is a hoax. Do you agree with President Trump? Does the American Petroleum Institute (API) believe that climate change is a hoax?

I would direct your attention to remarks made by API's President and CEO, Mike Sommers, at our annual State of American Energy program in 2019 where he stated:

"So let me state three things plainly: The risks of climate change are real. Industrial activity around the globe impacts the climate. And America's natural gas and oil industry is meeting the climate challenge head-on."

Question 2: For decades, API spent hundreds of millions of dollars spreading lies and misinformation about the realities of climate change. For instance, in 1982, API commissioned a Columbia University report on climate change, which concluded that climate change would have "serious consequences for [humanity's] comfort and survival" and unambiguously linked climate change to fossil fuel emissions. In 1998, a leaked document revealed API's "Global Climate Science Communication Plan" – a multimillion dollar, multiyear plan developed by the big fossil fuel corporations to twist and confuse the issue of climate change, especially the fossil fuel industry's role in driving carbon pollution emissions.

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Mr. Frank J. Macchiarola

Does API believe that the oil and gas industry will not remain economically viable if the American people know the truth about the connection between its emissions and the crisis of climate change? If API believes that the fossil fuel industry would remain economically viable, why did it find it necessary to lie to the American public about the realities of climate change?

As various federal agencies, energy experts and energy companies look at the global demand for energy over the coming decades, there is a clear role for oil and natural gas in meeting that demand. We are focused on meeting that future demand. We are also committed to delivering solutions that reduce the risks of climate change while meeting society's growing energy needs. We support global action that drives greenhouse gas emissions reductions and economic development. The oil and natural gas industry is part of the global solution and plays a vital role in developing and deploying technologies and products that continue to reduce GHG emissions while advancing prosperity and that are essential to extending the benefits of modern life to all.

Question 3: In November 2018, the U.S. Global Change Research Program released the Fourth National Climate Assessment (the Assessment), which found that the primary cause of climate change is human activity, primarily the burning of fossil fuels like oil and gas and that climate change will cost hundreds of billions of dollars and cause thousands of premature deaths each year in this country alone unless we take action now to drastically reduce our greenhouse gas emissions.

In your testimony, you said that "a strong U.S. oil and gas sector is essential to maintaining our nation's economic viability." Given the Assessment's findings that emissions from oil and gas could lead to hundreds of billions of dollars each year in economic damage due to climate change, would you like to amend your statement?

Our view, supported by data, expert analysis and experience remains that a strong U.S. oil and gas sector is essential to maintaining our nation's economic viability.

Market Interventions

Question 4: In your testimony, you were very clear that API stands in staunch opposition to any form of market intervention by the U.S. government, stating that such market interventions are "counterproductive" and "disproportionately harm efficient [energy] producers." As you know, the oil and gas industry regularly receives about \$11 billion each year in federal subsidies.

- a. Given this annual \$11 billion in subsidies represents significant market intervention, is it similarly API's position that the federal government should also not provide these subsidies to the oil and gas industry, and should instead allow different forms of energy to compete on an even playing field? If that is not API's position, please provide an accounting for how much of the \$11 billion the industry needs to remain economically viable each year.

API understands that there is a role for the federal government to play in the research, development and demonstration of new energy technologies and that this is often implemented through tax credits. We

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Mr. Frank J. Macchiarola

generally support these efforts, and believe that they should be energy neutral and that, at some point, the technology is developed to participate in the marketplace without those credits.

We are unable to confirm the source or accuracy of the \$11 billion figure referenced in this question. We recognize that cost recovery provisions in the tax code, such as IDC and depletion, have been identified as “subsidies” by some, however, these are not tax credits or grants, but merely ways to recover costs and allow cash to be reinvested back into the business. We fully support accelerated cost recovery for large capital-intensive businesses, like energy, as a tax policy and support the bonus depreciation approach enacted in the past and most recently extended in the Tax Cuts and Jobs Act. We note that the bonus depreciation provision applies to a variety of capital investment in a number of different mature energy industries and believe that supports a level playing field to supply energy to consumers.

- b. During your testimony, you told Senator Daines that “it is imperative” for Congress and the Trump administration to restore the Army Corps of Engineers’ (“Corps”) Clean Water Act Nationwide Permit (NWP) 12 to build more oil and gas infrastructure, including the Keystone XL pipeline. Doing so would mean Congress provide targeted federal relief in energy markets by clearing an obstacle for up to 70 oil and gas pipelines that fall under NWP 12.

Given that your request for Congress and the Trump administration to restore NWP 12 clearly conflicts with your claim that API does “not support specifically targeted federal relief measures in energy markets”, would you like to amend your statement and instead oppose federal action on NWP 12 to prevent targeted federal relief measures? If you do not wish to amend your statement, please provide a summary of any direct or indirect policies, regulatory changes, requests, etc. for which API has lobbied Congress or the Administration since January 1, 2020.

In my submitted testimony, I wrote: “with respect to policy, API has been clear from the outset of this historic crisis that we are not seeking industry-specific financial assistance or legislative authorizations as a result of the market disruption caused by the COVID-19 pandemic. We support Congressional action through the CARES Act in providing broad economic stabilization across the U.S. economy in the form of measures to maintain systemic liquidity and promote continued employment. And, we support efforts at the U.S. Department of the Treasury and the Federal Reserve to ensure systemic liquidity across the economy”. This statement does not conflict with my comments regarding the NWP-12 and the importance of oil and gas infrastructure.

Question from Senator Bill Cassidy

Question: Mr. Macchiarola, I’ve been told there are varying oil prices that make certain wells economic. One company told me their older wells have a certain break-even point while newer wells have a different one. What tends to be the general break-even point for older versus newer offshore deepwater wells understanding there are several variables related to well economics that can influence this?

- There are many factors that determine a well’s break-even point such as geology, potential production rates, water depth, and existing nearby infrastructure such as pipelines and platforms. The single most

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Mr. Frank J. Macchiarola

important factor is whether a well has been drilled already. A large portion of the cost of a well is in the drilling process. The break-even price for older wells which have already been drilled need only to exceed operating costs to remain in production.

- Rystad Energy estimates that Gulf of Mexico operating costs average around \$10 per barrel¹. Unless near the end of their productive life, most Gulf of Mexico oil wells will remain in production with oil prices above \$10 per barrel.
- A new deep-water project in the Gulf of Mexico, which would require multiple wells and new platforms, would need \$30 to \$40 per barrel to break-even according to Rystad Energy.²
- Since 2015 companies have driven down development costs by 60% and operational costs by 7%.

Question from Senator Martin Heinrich

Question: Mr. Macchiarola, the oil and gas industry in New Mexico has been particularly hard hit by the recent economic downturn with an estimated 4000 unemployed oil field workers. At the same time, according to IOGCC's recent data, there are about 60,000 documented orphan oil and gas wells in the US, with about 700 documented orphan wells in New Mexico. These are idle wells where the owner is unknown or insolvent. I recently called on Senate leadership to include stimulus funding for states and tribes to plug orphan wells to help protect the environment and put thousands of oil workers back to work.

In your view, would directing federal funding to states to plug orphan wells be an effective way of quickly putting oil workers back to work?

Directing federal funding to the states to plug orphan wells could provide work for some oil and gas workers recently unemployed. However, these are local and historical issues and we would refer you to rely upon local information and state regulatory bodies for the background on each specific well, especially as each case may vary as onshore basins do. State agencies that regulate our industry and that have people on the ground who track and inspect industry operations - including aging and orphaned wells - are more likely to have updated and accurate mapping and information for their state or local areas of jurisdiction. Most importantly, state regulators are typically best suited to manage local orphan well programs because they possess the technical expertise and competence to ensure the highest level of environmental protection.

Question from Senator Mazie Hirono

Question: In your testimony you refer to API's support for free market principles, while also noting that in April President Trump asked Russia and Saudi Arabia to reduce supply and raise the price of oil. In light of API's support for free market principles, did API agree with the successful request made by the Independent

¹ https://www.rigzone.com/news/offshore_operational_production_costs_have_fallen-28-jan-2020-160903-article/

² <https://www.houmatoday.com/news/20191123/forecast-gulf-to-produce-record-oil-again-in-2020-despite-job-losses>.

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Mr. Frank J. Macchiarola

Petroleum Association of America and others to the Federal Reserve to allow companies to use federal government loans under the Main Street Lending Program to repay company debt accumulated prior to the COVID-19 pandemic?

Our consistent position has been that we support the broad, economy-wide measures enacted with bipartisan support in the CARES Act and these provisions should be available to any qualified business under the provision laid out by the Federal Reserve and Treasury. We have not commented on the particular terms of the various lending programs set up by the Federal Reserve, but we continue to monitor those terms on whether any restrictions to such programs are properly defined and balanced and address the expectations of the intent of the CARES Act to help the broad economy.

**U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Ms. Jackie Roberts**

Questions from Ranking Member Joe Manchin III

Questions: The Federal Communications Commission has reported that 98% of West Virginians have access to fixed or mobile broadband, which is woefully inaccurate. For the last several years, I have been working on providing the FCC with proper speed test data to encourage them to update their coverage maps with more accurate data. Is improving the FCC's broadband coverage maps something your office has been looking in to? Is there anything additional that you think can be done to improve connectivity in West Virginia?

Answer: My office is aware of the concerns with the FCC broadband maps and agrees that the FCC maps do not accurately represent broadband speeds in West Virginia with a sufficient level of detail. However, the West Virginia Broadband Enhancement Council generally takes the lead on accurately mapping broadband within West Virginia.

Kelly Workman from the WV Broadband Enhancement Council provided the following: WV is one of 13 states working with the US Dept. of Commerce, NTIA, on its National Broadband Availability Map (NBAM) project which won't replace the FCC mapping but will give federal agencies and states more tools for assessment. We also have a focus on speed testing.

A map at page 4 of the MonPower/Potomac Edison Feasibility Study filed with the Broadband Enhancement Council shows large areas of WV that have no provider with 25/3 Mbps service. Also, the Appalachian Power Feasibility Study reports at page 9 that the percentage of 25/3 service in Mingo and Logan county is 63% and 67% respectively. I have provided links to both studies.

<https://broadband.wv.gov/news/monongahela-power-company-and-the-potomac-edison-power-company-have-submitted-a-feasibility-study-to-the-wvbec/>

<https://broadband.wv.gov/wp-content/uploads/2019/10/AEP-WV-Broadband-Feasibility-Study.pdf>

Further Contact in West Virginia:
Terri Blake
Telecommunications and Cable Television Supervisor
Public Service Commission of West Virginia
Utilities Division
201 Brooks St, Room 364
Charleston, WV 25323
(Office) 304-340-0442

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Ms. Jackie Roberts

Questions from Senator James E. Risch

Questions: The bulk of utilities in Idaho and my region have voluntarily committed to not disconnect customers during this pandemic. These utilities are experiencing loss of load from business customers coupled with an increasing number of non-paying residential customers. This has taken a toll on these utilities. The economic impact of this could be felt for years in the form of higher rates for consumers and higher financing costs for utilities.

What measures should Congress consider to provide additional flexibility and support for electric utilities to keep them financially stable, and how can we ensure that such relief is available to all parts of the sector – investor owned, rural cooperatives, and public power utilities?

Answer: As noted in the May 22, 2020 NASUCA letter to Congress (<https://www.nasuca.org/nwp/wp-content/uploads/2020/05/NASUCA-Letter-to-Congress-on-COVID-19-5-22-20.pdf>) and in my testimony before the Committee, when considering the financial stability of utility service providers, the near term provision of funding to support customers that are unable to pay their bills is of paramount importance. Over the longer term and depending on the trajectory of the overall economic recovery, additional support may be necessary to address the changing overall customer load profile. It is my belief that most utility service providers recognize that continuing to increase rates to cover costs is not a viable solution this the current challenge and that such approach (higher utility service costs) serves to hinder the overall economic recovery.

In the near term, Congress should provide immediate relief to help low income and newly unemployed customers pay their utility bills through additional LIHEAP funding for electric and natural gas customers, and a new LIHEAP type fund for water customers. Additionally, Congress should provide direct funding to utility service providers specifically earmarked for application against customer arrearages, in addition to increased LIHEAP, to help the commercial and industrial customers that are currently caught by the economic downturn and unable to pay utility bills (In theory, the current PPP stimulus loan program provides funds that can be used to pay utility bills, but not every business received a PPP loan).

In the longer term, Congress may need to provide direct funding to utility service providers to address any unrecovered costs due to loss of commercial and industrial customer load. Recovering these costs from the utility customers that do remain on the system will create an undue hardship. Congress should also consider opportunities to provide grants to allow technology upgrades that can make the provision of utility service provision more efficient and more affordable.

Finally, NASUCA noted that Congress should consider changes to the normalization requirements contained in the 2017 Tax Cut and Jobs Act, to allow state utility commissions additional flexibility to return excess accumulated deferred income taxes (ADIT) to customers sooner.

U.S. Senate Committee on Energy and Natural Resources
 June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
 Questions for the Record Submitted to Ms. Jackie Roberts

Questions from Senator Catherine Cortez Masto

Question 1: In the midst of the COVID-19 health crisis, it is essential that individuals have access to clean running water, electricity, and lines of communication, such as internet or telephone services. As you noted in your testimony, many utilities across the country have voluntarily or been required to suspend service disconnections, and in some cases, are reconnecting services that were disconnected prior to the pandemic. Paying back utility companies for these services will be a challenge for those struggling to recover from financial hardship.

- A. How long do you anticipate it will take for households to pay arrearages to their utility companies after they are able to begin earning a paycheck again?

Answer: Unknown. The answer will depend on the length of the economic downturn, the level of arrearages owed and the overall economic conditions moving forward (is the customer earning the same level of paycheck as they did before COVID?). Most utilities have 12-month payment plans and many states and utilities are in discussions to lengthen those plans. Part of the decision criteria will be whether utility service providers have other revenue sources to either forgive some arrearages or bridge the gap financially while customers are under payment plans.

- B. In addition to LIHEAP, are families looking to utilize programs, like the Weatherization Assistance Program or alternative programs, to increase energy efficiency and reduce their energy costs?

Answer: Yes, to the extent available. Many of these programs have a state-level funding counterpart or utility funding counterpart which may also be under stress, so the availability of these alternative programs is not guaranteed. Also, at least in the near term, some efficiency and weatherization programs are not able to operate because close contact and in-house access is needed. These are important long-term programs, but pure financial support may be necessary in the near term.

- C. From your experiences, what local, state, or federal programs have proven to be the most beneficial for households that are experiencing hardship due to COVID-19?

Answer: Broadly speaking, unemployment support has the most direct benefit to households experiencing hardship. SNAP and other food related assistance is equally important. Medicaid assistance is also important. The one-time stimulus assistance checks were helpful, but inadequate, especially in high cost areas. Regarding utility programs specifically, federal LIHEAP programs have the most direct benefit, followed by weatherization assistance programs.

Question 2: In April 2020, Nevada's unemployment rate reached over 28 percent, and now Southern Nevada temperatures are already exceeding 100 degrees. Making additional support available to low-income households in these hot summer months during this time of crisis is essential to the health and safety of Nevadans.

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Ms. Jackie Roberts

The National Association of State Utility Consumer Advocates' recent letter to Congress refers to the National Energy Assistance Directors Association's request for an additional \$4.3 billion in LIHEAP funding, but suggests that LIHEAP will need even more funding to help address the needs of individuals and households trying to make ends meet throughout this crisis.

- A. Based on your knowledge of the LIHEAP program and the needs of the consumers for which your Association advocates, what are the future needs of LIHEAP?

Answer: NASUCA supported the \$4.3 billion amount (increase for FY2020) requested by the National Energy Assistance Directors Association (NEADA). NEADA also is requesting \$5.1 billion in FY2021. But this amount is a fraction of what is likely needed. According to NEADA, the program currently serves about 6 million low-income households out of an eligible population of about 29 million households. And with the COVID impact, NEADA estimates the eligible population may have increased another 11 million households. Another important consideration is that the majority of LIHEAP funding goes towards winter heating assistance. Less money is dedicated towards summer cooling assistance, even though we face an economic crisis right now, while a heat wave is gripping much of the country. Simply put, additional funding for LIHEAP aimed at cooling assistance this summer is desperately needed. And there is no LIHEAP type support for water customers. Neither I nor NASUCA is in a position to put fixed dollar amounts on the actual future need, but it is clearly several billion dollars above current funding levels. Additional expertise on the issue could come from NEADA, the National Energy and Utility Affordability Coalition (NEAUC) and the National Consumer Law Center (NCLC).

- B. How can Congress better ensure that those who are eligible for LIHEAP are fully utilizing the program to help pay for their energy bills?

Answer: This is very important question and best addressed to NEADA and NEUAC, who while not part of the current committee hearing, would be able to give a more comprehensive answer than I can offer.

Question 3: In the National Association of State Utility Consumer Advocates Resolution you provided with your written testimony, consumers are urged to communicate with their utilities early and frequently if they are having trouble paying bills. The Resolution also states that consumers should pay what they can to minimize the balance that will be due for payment at a later date.

- A. In your experience, are you finding that utilities are more willing to work with their customers during this difficult time?

Answer: Yes. While not universal, that vast majority of major investor owned utilities have been very open to working with customers during this crisis and are working closely with state regulators and NASUCA members to try to find reasonable accommodation. NASUCA is in frequent communication with the national associations for state regulators (NARUC) and the electric (EEI), natural gas (AGA) and water (NAWC) utilities and does have conversation with representatives of public power (APPA) and rural cooperatives (NRECA). All recognize the challenges customers face and do want to find workable solutions.

U.S. Senate Committee on Energy and Natural Resources
June 16, 2020 Hearing: *The Impacts of COVID-19 on the Energy Industry*
Questions for the Record Submitted to Ms. Jackie Roberts

B. What kind of services are utilities making available to their customers?

Answer: Currently the focus is on extended payment plans. However, additional inquiries are being made into providing more helpful rate programs (i.e., percentage of income plans) and also arrearage forgiveness plans for staying current on payment plans. Some utilities are enhancing existing programs to match up qualified customers with state/federal utility assistance plans. It appears that energy efficiency and weatherization programs are getting less current focus because they can't be executed safely at this time but will likely re-emerge as the COVID crisis abates. Each state or utility may offer some variation or extension of these plans, but the above would cover the majority of services being made available to customers.



Statement for the Record from
Anne Bradbury, CEO of the American Exploration and Production Council

U.S. Senate Committee on Energy and Natural Resources
"Impacts of COVID-19 on the Energy Industry"
Tuesday June 16, 2020

U.S. Independent Oil and Gas Producers are the Authors of the American Energy Revolution

Chairman Murkowski, Ranking Member Manchin and members of the Committee, thank you for holding this important hearing about the need to revive our economy in light of the COVID-19 pandemic's effects on the energy industry.

I am submitting this testimony today on behalf of the American Exploration and Production Council (AXPC), the national trade association representing the largest independent oil and natural gas production companies in the United States. Data from IHS Markit shows that U.S. independents combine to produce about 83 percent of the nation's oil production and 90 percent of its natural gas and natural gas liquids (NGL) production.¹

We lead the world in the cleanest and safest onshore production of oil and gas, while supporting millions of Americans in high-paying jobs and investing significant resources in our communities.

Because of our perseverance, investments in innovation, and focus on American-made energy, the U.S. has gone from a nation reliant on foreign oil to a net exporter in 2019. This has provided low, stable, affordable prices for American families and businesses, good American jobs, and a more secure country. We are proud of this accomplishment.

Our companies were the primary driver of the shale revolution and the energy independence we sought for decades. The shale revolution, which is credited with creating 4.6 million new jobs and ten percent of our overall GDP growth in the last decade, has been an essential driver of our nation's economic growth.

Because of the COVID-19 pandemic, the American oil and gas industry is experiencing virtually unprecedented demand decline coupled with serious supply disruption – a combination that has undermined the financial health of our industry. This is a critical time for us and for the long-term prospects of the American economy and American energy independence.

¹ "The Economic Contribution of Independent Operators in the United States" (May 2019) HIS Markit, for IPAA <https://www.ipaa.org/new-study-independent-oil-gas-operators-drive-american-energy-development-by-wide-margin/>

COVID-19 Destroyed Jobs and Stressed State Budgets

Since March 13 of this year, over 65 percent of all U.S. oil-drilling rigs have been idled. Each onshore rig supports at least 22 direct jobs, with an average pay of \$60,000 per year – totaling \$1,320,000 per rig per year in direct salaries. For each direct job, it is estimated that three indirect jobs are created to support drilling rig activity – including food, lodging, and services in local communities. That is a total of 88 jobs per onshore oil rig. As of June 11, 520 rigs had been idled, meaning that nearly 46,000 Americans are currently out of work, and over \$686,400,000 has been lost in direct upstream wages – just since March.²

In addition to jobs and wages lost, states in which we operate are losing revenue that is vital to supporting emergency services, education, and road repair. For example, the Oklahoma Chamber of Commerce published a 2019 report warning that an extended energy sector slowdown could result in a 25 percent net decline in total state tax revenue. And, about 40 percent of New Mexico's budget comes directly from the extraction of oil and gas.³

Oil Market Manipulation Hurt the U.S. Oil and Gas Industry

In early March, OPEC-plus nations announced plans to flood global markets with an additional four million barrels of oil per day. This oversupply, compounded with the slowing demand for product due to policies put in place to prevent the spread of the Coronavirus, created a precipitous drop in commodity prices. This change dramatically impacted our industry, including the AXPC member companies.

Russia has been targeting the U.S. shale industry in an attempt to drive it out of business. The announcement from Saudi Arabi and Russia in early 2020 to increase production of oil sent commodity prices plummeting by nearly 50 percent overnight. The market reaction was devastating: by mid-March, AXPC member companies announced planned cuts in domestic production and adjusted capital expenditures, which meant less investment in the U.S. economy, Americans losing jobs, and a threat to our national security.

Only weeks after this oil-market crash; the Organization of Petroleum Exporting Countries (OPEC) and Russia (OPEC-Plus) announced a deal to curb production by nearly 10 million barrels per day – an agreement that was reached because the Trump Administration and members of Congress who support American energy independence pressured the governments that were using this global health crisis to manipulate the oil markets, with the specific aim of hurting U.S. oil and gas producers.

In responding to market signals, our industry voluntarily cut crude production by 2 million barrels a day from the record production levels set the week of March 13.

² Data from the International Association of Drilling Contractors (IADC), updated 6/11/2020

³ "Oil production expected to continue to plummet into the fall" by: Kevin Robinson-Avila, Rio Rancho Observer (may 8, 2020) <https://www.abqjournal.com/1453438/oil-production-expected-to-continue-to-plummet-into-the-fall-ex-nm-and-us-face-a-long-hard-recovery-over-the-next-few-years.html>

Over the last two months, the OPEC-Plus deal to curb global oversupply and U.S. producers' voluntary production cuts have stabilized the market. These actions pushed the price of oil from below zero – a first in history – to above \$36 per barrel, as of mid-June. As the OPEC-Plus production cuts were extended through July, we hope that international producers will continue to evaluate production levels in coming months, given the unprecedented, ongoing worldwide demand shock.

Demand Destruction from Economic Shutdowns Exacerbated Market Conditions

Worldwide demand destruction for oil and gas due to COVID-19 lockdowns has led to unprecedented oil and gas market imbalances. Petroleum is the largest source of U.S. energy and transportation accounts for the largest share of U.S. petroleum consumption. With planes grounded, cars parked, and public transportation at a standstill, demand for petroleum products has collapsed. Notably, the U.S. Energy Information Administration (EIA) estimated that demand in April was down to the lowest levels since 2002.

Utilize Strategic Oil Reserve to Reduce Strain on Storage Capacity

The U.S. Strategic Petroleum Reserve (SPR) is the world's largest supply of emergency crude oil and was established primarily to reduce the impact of disruptions in supplies of petroleum products and to fulfill U.S. obligations under international energy agreements. For the benefit of the American taxpayer, it makes economic sense for the government to purchase oil to fill the SPR now, while prices are low.

As Congress looks for ways to revive our economy, we encourage policymakers to provide the Department of Energy (DOE) additional flexibilities with respect to the SPR. Allowing DOE the flexibility needed to delay SPR sales until FY2022 could help both our companies and the American taxpayer. Doing so enables DOE to forego selling oil at currently low prices, while also helping manage the amount of oil in the global marketplace.

Our Industry is Committed to Free-Market Principles

As an organization that strongly believes in free-market principles and the innovative, entrepreneurial spirit of America, AXPC has not asked for direct financial support from the federal government.

U.S. producers cut billions of dollars in capital expenditures and have been doing everything they can to protect their employees during this crisis. Some companies are looking at small business and other loans, in order to maintain payroll and to maintain these well-paying jobs the industry provides throughout the country.

We have not sought, and will not seek, a bailout; all we ask is that Congress enact policies to ensure a healthy American energy sector. Our goal is to work with Congress and the Administration to come up with solutions that help companies continue to invest in our economy and American energy.

In addition to continued diplomatic pressure to maintain balance to global oil markets, AXPB endorses measures that help American workers across multiple sectors impacted by the pandemic.

AXPB also advocates for full implementation of the U.S.-China Phase One trade agreement to help relieve supply and storage issues. Under this agreement, China agreed to purchase nearly \$60 billion of “U.S. energy” over the next two years. Early data show China has only purchased a *de minimis* amount of U.S. crude in the first months of 2020, while it has increased purchases of crude oil from Saudi Arabia and Russia.

China’s implementation of the trade agreement is also critical because China can utilize its considerable storage flexibility with its national petroleum reserves. However, these Chinese stockpiles are currently being filled primarily with Russian and Saudi crude. Rather than increasing imports from countries like Russia and Saudi Arabia, the Chinese government must take the necessary steps to remain in good standing with the U.S. as a trusted trade partner.

American Oil and Gas Supports Economic Recovery, Environmental Progress, and National Security

American oil and gas is crucial to our economic recovery – but it is also critical to our national security. As the U.S. became a net exporter of oil for the first time ever in 2019, it not only strengthened our energy security, but it allowed our leaders to protect our allies – and pressure our adversaries – using the full weight of American energy.

American oil and gas is an environmental leader in the global energy industry. According to U.S. EPA, the United States is a world leader in protecting the environment and reducing greenhouse gas emissions. From 2005 to 2018, total U.S. energy-related CO₂ emissions fell by 12 percent. In contrast, global energy-related emissions increased nearly 24 percent from 2005 to 2018.

As an industry, we have an irreplaceable role in developing and employing the technologies and innovative solutions that secure our long-term energy future and national security.

As we pull through this crisis, we will continue to take care of people and assets, support our customers, and closely manage inventories and storage. We will also work to secure or revisit our capital expenditures.

By the same token, we are an industry with a long-term focus. We know that global oil and gas demand will take time to reignite. As American companies committed to our workers, our communities and our country, we look forward to working together on solutions that ensure a vibrant U.S. oil and gas industry, a growing, prosperous economy, and energy security that protects our interests at home and abroad.

###



Chet M. Thompson
President and CEO

American
Fuel & Petrochemical
Manufacturers

1800 M Street, NW
Suite 900 North
Washington, DC
20036

202.457.0480 office
202.844-5505 direct
202.457.0486 fax
Cthompson@afpm.org

June 16, 2020

The Honorable Lisa Murkowski
Chairman
Senate Committee on Energy
and Natural Resources
304 Dirksen Senate Office Building
Washington, DC 20510

The Honorable Joe Manchin
Ranking Member
Senate Committee on Energy
and Natural Resources
304 Dirksen Senate Office Building
Washington, DC 20510

Dear Chairman Murkowski and Ranking Member Manchin,

The American Fuel & Petrochemical Manufacturers (AFPM) appreciates the opportunity to submit testimony for the record for the June 16, 2020 hearing *"Impacts of COVID-19 on the Energy Industry"*. AFPM proudly represents nearly all of U.S. refining and petrochemical capacity. Our members produce the gasoline, diesel, and jet fuel that power the U.S. transportation sector, as well as the petrochemicals that serve as the basic building blocks that enable people to live safe and modern lives, including health care and hygiene products and food packaging. AFPM's members support 3.5 million U.S. jobs.

Our industries were rightfully classified as essential infrastructure by the Department of Homeland Security and state and local authorities, allowing our companies to continue meeting needs "critical to public health and safety, as well as economic and national security." This designation was a recognition that our members' products are critical to our nation's response to COVID-19. They keep our medical environments safe and sanitary. The petrochemicals that comprise single-use plastics reduce contamination in medicine, medical products, and food. Petroleum-based soaps used by medical professionals greatly reduce the risk of infection. Carbomer polymers and glycerin are key ingredients in hand sanitizer. Disposable gloves are made from the petrochemicals latex, vinyl, and nitrile. Disposable face masks and medical gowns often consist of synthetic polymers, and disposable syringes, bags that hold blood and saline, and tubing used for intubation are all made of plastic. And the transportation fuels we produce help ensure that store shelves are stocked, ambulances are running, and that essential employees can get to their jobs every day. This is just a very short list of the ways in which our industries are actively contributing to the response against COVID-19.

However, in meeting these critical needs, the refining and petrochemical industries have faced significant operational and market challenges from COVID-19. Operationally, there is nothing more important than the safety of our workers and AFPM members take the COVID-19 threat very seriously. Our members have implemented restrictive pandemic planning measures to reduce workforce exposure and to severely limit the possibility of community spread within their facilities. Non-essential employees have been placed on telework; all travel, both domestic and international, is restricted; social distancing protocol is in effect in control rooms, at docks, and for essential employees at the corporate level; truck



drivers are no longer allowed to exit their vehicles when making deliveries; and non-critical inspections and audits have been postponed, among other measures. AFPM and our companies also continue to think ahead and plan for additional emergency response scenarios, for instance how our companies will respond in the event of a hurricane.

The operational challenges have been compounded by market challenges. The refining industry has faced a particularly unprecedented reduction in demand for its products over a short period of time. In fact, March, April, and May demand for total refined products such as gasoline, diesel and jet fuel fell by 30 percent to average 12.4 million barrels per day compared to 17.4 million barrels per day for the same period last year. At various points, gasoline demand fell by more than 50 percent, diesel fell by 25 percent, and jet fuel demand fell by 85 percent. Refinery utilization fell below 70 percent for much of March, April, and May, compared with 90 percent in a typical operating year. The impact was felt even more deeply by refineries on the West and East Coasts. As states begin to reopen some product demand has begun increasing, although it is still below average by 20 percent or more. There also remains significant volumes of gasoline and diesel in storage that will continue to place pressure on refiners. For this reason, utilization is expected to increase more slowly than demand as the market works through existing inventory. In a typical year, the U.S. also exports more than 3 million barrels of product per day to other markets, mostly in Mexico and Latin America, with some diesel exports to Europe. The impact of COVID-19 on these export markets will be a critical factor in how long the refining industry will take to recover.

The U.S. petrochemical industry has likewise faced significant challenges as automotive; aerospace, construction, oil and gas and other industrial sectors have reduced their inputs. This reduction in demand has coincided with low oil prices eroding the U.S. petrochemical industry's feedstock cost advantage over competitors globally.

Despite these significant operational and market challenges, AFPM's members have not and do not seek any sector-specific financial assistance. AFPM firmly believes that as the global economy recovers, the U.S. refining and petrochemical industries will continue leading as the most efficient refiners and petrochemical manufacturers in the world. All industries impacted by the government-driven response to this public health crisis should continue having access to more general relief programs, particularly those that provide liquidity. Beyond that, however, Congress should not take any steps that will make recovery for our critical industries slower or harder.

AFPM members are committed to doing their part to limit the spread of the disease, while maintaining the core services and functions our nation requires daily. AFPM appreciates the Committee's attention to this critical issue.

Sincerely,

Chet Thompson



June 15, 2020

The Honorable Lisa Murkowski
Chairman
Senate Committee on Energy and Natural Resources
304 Dirksen Senate Office Building
Washington, DC 20510

The Honorable Joe Manchin
Ranking Member
Senate Committee on Energy and Natural Resources
304 Dirksen Senate Office Building
Washington, DC 20510

Dear Chairman Murkowski and Ranking Member Manchin:

On behalf of the American Gas Association (AGA), we applaud your Committee's work to examine the impacts of COVID-19 on the energy industry. AGA understands that many Americans are currently facing unprecedented hardships; access to energy should not be an additional burden for vulnerable customers at this difficult time. All across the country we have been facing difficulties and challenges that no one could have envisioned due to the COVID-19 pandemic. During this unpredictable time, natural gas utilities have been a constant—ensuring reliable delivery of natural gas to the frontlines and the families who rely on it.

AGA member companies have demonstrated their unwavering commitment to provide essential, affordable and reliable energy to nearly 180 million Americans in their homes, to frontline facilities, and to businesses struggling to weather this crisis. During these unprecedented financial challenges, natural gas utilities have suspended disconnecting service and waived late fees. Households that use natural gas for heating, cooking, and clothes drying save an average of \$870 per year compared to homes using electricity for those applications. The industry is also supporting the communities in which they serve by donating personal protective equipment (PPE) to frontline workers and donating millions of dollars in aid to relief organizations.

As some states begin to open back up, the natural gas industry will continue to play an integral role in the economic recovery of this nation—helping to rebuild the communities they serve and providing the support that Americans need to get back on their feet. AGA companies have always had programs in place to help those experiencing financial distress. This pandemic has brought unparalleled economic hardship, and companies are working with customers to ensure they have the tools they need during this difficult time. AGA members are proactively communicating with customers about all available financial resources to help customers establish payment plans as early as possible to help lessen the burden.

400 N. Capitol St. NW 4th Floor, Washington, DC, 20001 P 202-824-7111 F 202-824-9111 E kharbert@aga.org www.aga.org

American Gas Association represents more than 200 local energy companies committed to the safe and reliable delivery of clean natural gas to more than 71 million customers throughout the nation.

AGA and our members have long supported the Low Income Home Energy Assistance Program (LIHEAP), a critical federal program to help vulnerable Americans by placing funding in the hands of those who need it most. Natural gas utilities successfully advocated for an additional \$900 million for LIHEAP in the first stimulus package, which, the National Energy Assistance Directors' Association (NEADA) estimates will serve 3 million households, including those currently receiving LIHEAP, and new households facing recent unemployment. Unfortunately, with more than 30 million Americans filing for unemployment in the last few months, this funding only scratches the surface of what families will need to stay afloat. The resulting increase in the low income population has increased the number of LIHEAP eligible households by 8.5 million—35.2 million to 43.8 million home eligible. According to NEADA data, an additional \$4.3 billion for LIHEAP is necessary to address that growing need, a funding level that has received bipartisan support in both the House and Senate.

Natural gas utilities are part of the communities they serve and the support they provide goes far beyond the energy they deliver—we are seeing that now more than ever. We appreciate the work your Committee has done for reliable energy access and to understand the impacts COVID-19 is having on the energy industry.

Sincerely,

A handwritten signature in black ink, appearing to read 'K Harbert', with a stylized flourish at the end.

Karen Harbert
President & CEO
American Gas Association



AMERICAN PUBLIC GAS ASSOCIATION

June 23, 2020

The Honorable Lisa Murkowski
Chairman
Senate Energy and
Natural Resources Committee
304 Dirksen Senate Office Building
Washington, DC 20510

The Honorable Joe Manchin
Ranking Member
Senate Energy and
Natural Resources Committee
304 Dirksen Senate Office Building
Washington, DC 20510

Re: Full Committee Hearing to Examine the Impacts of COVID-19 on the Energy Industry

Dear Chairman Murkowski and Ranking Member Manchin:

The American Public Gas Association (APGA) appreciates the Committee's commitment to addressing the significant impacts that COVID-19 has had on the energy industry. Throughout this crisis, approximately 1,000 communities across the U.S. have relied on their public gas utilities to maintain delivery of safe, reliable, and affordable fuel for use in cooking, clothes drying, and space and water heating, as well as for various commercial and industrial needs. We understand and appreciate these challenging times impacting all Americans, and our members have been proud to support their customers in this time of need.

APGA members are locally-owned and governed to be accountable to the communities they serve – community aid and service is the mandate for these utilities. Consequently, our members have taken significant steps to ensure natural gas continues to safely flow to all during this crisis, especially those with emergency financial needs. To best serve their communities, our members are pausing shutoffs, waiving fees and penalties for late payment, and restoring service to those in need. Furthermore, our members and other pipeline operators have developed COVID-related procedures to ensure that personnel have the planning, support resources, and technology they need to perform their roles and to minimize exposure to the virus, especially since many public utility employees must enter homes or businesses to work on the critical infrastructure.

As the country begins to responsibly re-open, public gas systems continue to focus on providing safe, reliable, and affordable energy to their customers to best support their communities. Unfortunately, municipal gas utilities have also fallen victim to the hardships presented by the pandemic, having lost roughly \$140 million since March and being projected to realize additional revenue losses in the coming months. Therefore, we would like to reiterate the request made to Congress earlier this month for federal assistance to municipal utilities to help offset revenue losses as a result of COVID-19. APGA, along with other municipal utility associations, submitted a letter (Attachment A) to Senate leadership explaining that, while Congress has acted swiftly to provide much needed aid to various industries, municipal utilities have been largely ineligible for many of these programs. It is imperative that this oversight be rectified, to ensure that municipal utilities can continue to remain focused on what matters

most: fulfilling critical energy needs and assuring the safety of their customers and employees by helping to prevent the spread of the virus.

During this crisis, many of the best solutions have come at the local level – those closest to the needs of their communities. Public gas utilities continue to be essential to thousands of communities across the country, and we look forward to working together towards solutions that support these critical entities through responsible recovery. Thank you again for your commitment to understand and address the challenges our industry faces as a result of the COVID-19 crisis.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Dave Schryver". The signature is fluid and cursive, with the first name "Dave" and last name "Schryver" clearly distinguishable.

Dave Schryver
President & CEO
American Public Gas Association

cc: members of the Senate Energy and Natural Resources Committee

ATTACHMENT A



June 10, 2020

The Honorable Mitch McConnell
Majority Leader, United States Senate
317 Russell Senate Office Building
Washington, DC 20510

The Honorable Chuck Schumer
Minority Leader, United States Senate
322 Hart Senate Office Building
Washington, DC 20510

Dear Leader McConnell and Minority Leader Schumer,

We, the undersigned, represent municipal gas, drinking water, and clean water utilities that provide millions of Americans with critical services. Municipal utilities are unique in that they are owned by, and accountable to, the customers they serve.

Municipal utilities have put consumer interests at the forefront of their response to community needs during the coronavirus crisis. Our members have accommodated the needs of the families, communities, local businesses, and major industries harmed by COVID-19 by waiving late payment fees and penalties, suspending service shut-off for non-or late payment, and even restoring service to those without essential utilities.

Yet like other companies and utilities during this crisis, municipal utilities are facing declining revenues due to the decreased economic activity across the country and the inability of customers to meet their obligations. For example, some larger customers of municipal gas utilities have requested deferral of payments as factories, plants, and businesses shutter and they are unable to generate income to pay utility bills. Municipal gas utilities have lost roughly \$140 million since March, and are projecting additional revenue losses in the coming months. The drinking water and clean water sectors together estimate that they will lose more than \$30 billion in annualized revenues as a result of water shutoff moratoriums, increased late payments, reductions in non-residential water demands, and fewer new customers related to the COVID-19 pandemic.

Congress has acted swiftly to extend aid to many distressed sectors of the economy, including the utility sectors. However, our members are ineligible for many aid programs put forth due to their size, status as a municipal utility, or other eligibility factors. This includes not only direct aid, but many tax incentives and employer and employee assistance. It is imperative Congress provide federal assistance to municipal utilities to help offset their revenue losses as a result of the COVID-19 crisis. Funds should be made available for municipal utilities to recoup projected revenue losses directly resulting from decreased demand, and not limit local aid solely to COVID-19 expenses. Congress should also strongly support financial assistance programs to allow homeowners, renters, and businesses to maintain essential utility services during this public health emergency.

Municipal utilities remain focused on preventing the spread of COVID-19, assuring the safety of our customers and our employees, and continuing to provide safe, reliable and affordable utility services to

the community. We encourage Congress to take actions that will assure the health and safety of our communities, lower costs of providing critical utility services, and enhance our ability to exit this economic downturn swiftly.

Sincerely,

American Public Gas Association

Association of Metropolitan Water Agencies

National Association of Clean Water Agencies



2451 Crystal Drive
Suite 1000
Arlington, VA 22202-4804
202-467-2900
www.PublicPower.org

**Statement for the Record
Of the American Public Power Association to
The Senate Committee on Energy and Natural Resources for
The Hearing to Examine the Impacts of COVID-19 on the Energy Industry**

June 16, 2020

The American Public Power Association (APPA) writes today to thank the Senate Committee on Energy and Natural Resources for its consideration of the impacts of the COVID-19 pandemic on the energy sector. APPA is the voice of not-for-profit, community-owned utilities that power nearly 2,000 towns and cities nationwide. We represent public power before the federal government to protect the interests of the more than 49 million people and 2.6 million businesses that public power utilities serve, and the 93,000 people they employ.

As will be discussed in more detail below, APPA estimates that public power utilities will lose up to \$5 billion in revenues in 2020 due to the pandemic. While some actions Congress has taken – and could still yet take – will help at the margin, APPA strongly believes that, to ensure relief gets to all public power utilities needing assistance to the extent needed, Congress must provide direct aid to these community-owned utilities. We believe a forgivable loan program would ensure that aid goes to the utilities that need it. Such a program also would be cost effective in that loan proceeds would be forgivable only insofar as they were used as a credit against pandemic-related delinquencies or to partly offset pandemic-related declines in electric power load.

Since March, health care personnel and first responders have been on the front lines facing the COVID-19 pandemic. Likewise, Americans – and American businesses – have done their part to help stop the spread of this coronavirus through social distancing and quarantining. But critical to their success is the electricity that powers homes, businesses, and hospitals. Without electricity there would be no ventilators, lighting, cellphones, modems, sterilizing equipment, testing equipment, emergency dispatch, and the list goes on. Likewise, ambulances, fire trucks, and police cars may burn gasoline and diesel, but it takes electric pumps to refuel them. And it is electricity that makes our homes habitable and powers the devices that allow us to work remotely.

In providing this critical service, the top priorities for public power utilities throughout the pandemic have been the physical, logistical, and financial resources needed to operate while keeping workers and customers safe. Just some of the out-of-the-ordinary steps public power utilities have taken in response to the pandemic include:

- Redesigning work procedures and work sites to meet CDC recommendations;
- Acquiring resources – including testing, personal protective equipment (PPE), and other equipment;
- Building virus contact tracing programs and applications;

Page 2
June 16, 2020

- Slowing and altering construction work, and work schedules, to minimize the possibility of infection spread;
- Quarantining and isolating workers in their homes or on site to ensure reliability; and
- Partnering with local organizations or setting up shops internally to create and manufacture PPE and sanitizer.

Public power utilities are also responding to their own financial challenges, including increased costs and reduced revenues. Financial concerns may seem secondary when life safety is on the line, but workers must be paid, the fuel that drives our power plants is not free, and equipment must be paid for when repairs are needed.

In addition to the cost of the new and unique operational steps discussed above, we also face the added costs all employers are facing, including increased sick time for workers infected by COVID-19 and the overtime paid to other workers who must take up the slack. In addition, as governmental employers, all public power providers are required by the Family First Coronavirus Response Act (FFCRA) to pay emergency paid sick leave and paid family leave, but are specifically precluded from receiving the payroll tax credits intended to offset the cost of providing these benefits.

Costs matter because public power utilities provide retail power at cost-based rates. That keeps rates lower, but also means that when costs increase, then rates must increase accordingly. As units of local government, public power utilities have no shareholders or equity partners to tap as a resource, but generally must rely on one source of funds: the fees their customers pay. Ultimately all utility operations – wages, fuel, power, capital investments – are paid with revenues from the sale of electric power. Some utilities manage day-to-day and month-to-month cash flow fluctuations by issuing short-term notes. Some also finance longer-term capital investments by issuing municipal bonds. But, again, ultimately both notes and bonds are repaid from revenue raised via the sale of electric power.

The problem is that utility customers across the country are facing their own financial challenges. Tens of millions of Americans are newly unemployed and tens of millions more are worried about losing their jobs. As result, delinquency in bill payments is increasing and the volume of uncollectable accounts is expected to rise as the effects of the pandemic play out. Most public power utilities suspended shutoffs. They have also provided their customers with flexible payment plans, informed them about the Low-Income Home Energy Assistance Program or other emergency assistance, and eliminated late fees and other charges for missed payment. They have done all this while still incurring the fuel, operation, and maintenance expenses necessary to provide their customers power and not receiving the revenue necessary to pay these expenses.

Arrearages

APPA surveyed its members in May on the financial effects of the pandemic, including arrearages. Historically, delinquent accounts total, on average, 7.3 percent of monthly revenue – or between \$300 and \$400 million. On average, the survey found that this amount has nearly doubled, increasing to just under 13 percent of monthly revenue. The **increase** in delinquents is therefore in the range of \$300-\$400 million monthly. The survey was conducted just one full billing cycle after the pandemic emergency began. With the effect of another 20 million job losses, we believe arrearages will be substantially higher in the next billing cycle. We also expect arrearages to continue to grow after June. The economy began creating new jobs in May, but there still has been a net job loss of 19.6 million jobs since February. Likewise, a recent Electric Power Research Institute survey shows 40 percent of respondents who are concerned or very concerned about being able to pay their electric utility bill and 26 percent of unemployed respondents saying they had skipped (or would skip) paying their utility bills. With an almost guaranteed increase in arrearages in June

and highly likely continued increases in such non-payments throughout the remainder of the year, APPA projects that arrearages are likely to reach at least \$1 billion, and possibly more, by the end of 2020.

In the CARES Act, Congress did supplement the \$3.74 billion fiscal year 2020 appropriation for the Low-Income Home Energy Assistance Program (LIHEAP) with an additional \$900 million. But some states are already running out of these supplemental funds, and the National Energy Assistance Directors Association (NEADA) predicts that demand will increase precipitously in the next several months.

In addition, some states, counties, and localities that received a portion of the \$150 billion Coronavirus Relief Fund (CRF) are developing programs to direct some of those funds to provide utility customer assistance grants to customers facing economic hardship as a result of the pandemic. These programs are based on welcome guidance issued by Treasury in May and fully supported by APPA. They are not, however, likely to address the deep financial needs public power utilities will face. First, it is unclear how widespread such programs will be or how much of the CRF will be dedicated to them. Second, given that public power utilities are just 15 percent of the retail electric market, and electric power is just one of several utilities for which aid may be provided, there is by definition a limited proportion of CRF funds dedicated to such programs that will flow to public power customers.

Revenue Loss Due to Decline in Load (Demand)

Additionally, APPA members surveyed in May also reported (on average) an overall decline in energy use. While there are wide regional variations, public power utilities nationwide report a modest increase in residential sales of approximately three percent, but declines in commercial and industrial load of approximately 10 percent. These load shifts are in line with broader trends in the sector. Smaller utilities tended to have smaller residential growth, but also smaller losses of commercial and industrial load. Several factors reduce the negative effective of declining sales. The prices paid for purchased power and/or fuel may have declined. Likewise, a decline in sales also means a decline in the need to generate and/or purchase power. To correct for these affects, APPA member utilities were also asked to project the net revenue effects of the pandemic. Most estimated revenue losses from zero to five percent, but two out of five estimated net losses of five percent to 10 percent or even more, with the impact felt harder in select states.

Based on these survey results, APPA used 2019 Energy Information Administration (EIA) data to create several scenarios converting revenue reductions experienced to date into revenue reduction projections for all of 2020. Under these scenarios, projected retail revenue losses ranged from \$2 billion to \$3 billion and projected wholesale revenue losses were roughly \$1 billion. Combined projected net revenue losses from wholesale and retail sales for 2020 were from \$3 billion to \$4 billion. By way of comparison, revenues to public power utilities totaled \$58 billion in 2017. Again, this is in addition to revenue declines due to arrearages.

APPA Priorities in Response to COVID

Direct Aid

APPA's top priorities in the ongoing pandemic are that public power utilities have the physical, logistical, and financial resources to continue to operate while keeping their workers and customers as safe as possible. Logistical and operational concerns are largely being addressed through our interaction with various stakeholder groups and federal departments and agencies. However, we believe our members' financial concerns should be dealt with through a collection of options including primarily the provision of direct aid to public power utilities. It is worth noting that while almost all of the 2,000 public power utilities operating in the U.S. would meet the Small Business Administration standard for being small – in fact nearly 1,300 have 10 or fewer employees – they do not qualify for the forgivable loans provided by the Paycheck

Page 4
June 16, 2020

Protection Program (PPP) from which other small businesses are benefiting. However, we believe a mechanism akin to the PPP to help cash-strapped public power utility customers to replace the direct financial costs of pandemic-related declines in power usage would be appropriate. Under such a program, loan proceeds would be forgivable insofar as they were used as a credit against pandemic-related delinquent customer accounts or as a partial offset to pandemic-related declines in electric power load.

LIHEAP

APPA is also asking Congress to consider a \$4.3 billion supplemental appropriation for LIHEAP, the nation's single most powerful tool for providing need-based energy security. Again, the \$900 million supplemental for LIHEAP provided by the CARES Act is being helpful, but NEADA is already estimating that additional need will be closer to \$8.5 billion. This request is not redundant to the request for direct aid above: any unpaid bills paid by LIHEAP would not be forgivable under the loan program.

Bond Modernization

APPA also appreciates the work to create the Municipal Liquidity Facility at the Federal Reserve. We believe that, when implemented, this facility could provide a needed service as a lender of last resort for short-term debt. However, this facility is limited to short-term debt and will almost certainly be limited to the nation's largest state and local entities. As a result, APPA recommends two additional steps to help public power utilities with longer-term financing. First, to help smaller borrowers, we ask Congress to include in COVID-19 response legislation the provisions of H.R. 3967, the Municipal Bond Market Support Act. This bipartisan bill would expand the number of smaller issuers that banks – historically smaller local banks – are encouraged to lend to by increasing the small-issuer exception from \$10 million to \$30 million. Second, we ask Congress to include in COVID-19 response legislation the provisions of H.R. 2772, the Investing in Our Communities Act. This bipartisan bill would reinstate the ability to issue tax-exempt advance refunding bonds. Tax-exempt advance refunding bonds saved public power utilities more than \$600 million from 2013 to 2017 (the last year tax-exempt advance refunding was allowed) – savings passed onto utility customers or reinvested – and could provide needed financial relief today and in the future.

Comparable Incentives

If Congress includes provisions to expand or extend energy-related tax incentives in COVID-19-related legislation, APPA asks that they also be modified to provide a comparable incentive to public power utilities. Currently, tax incentives provide no direct benefit to public power or electric cooperative utilities, both of which are exempt from tax and collectively provide power to nearly 30 percent of retail customers. If Congress intends to create incentives in pursuit of national energy goals, it should realize that tax-based incentives will not have the market-wide reach of direct grants and other incentives. We support tax credit refundability – as provided under the discussion draft for the Growing Renewable Energy and Efficiency Now – as one mechanism to allow in the sector to benefit, including public power utilities, electric cooperative utilities, investor-owned utilities, and merchant generators.

Power Marketing Administrations (PMAs)

Finally, APPA appreciates the emergency supplemental appropriation provided under the CARES Act to the hydropower programs of the nation's Power Marketing Administrations, the U.S. Army Corps of Engineers, and Bureau of Reclamation. The CARES Act, however, failed to amend current law, which requires that these emergency appropriations be recovered with rate increases by electric customers. APPA believes that Congress should explicitly state that CARES Act emergency funds may not be recovered in rates from customers of the Federal Power Program. Now is not the time to raise rates charged to federal hydropower

Page 5
June 16, 2020

customers such as public power utilities and rural electric cooperatives, who would in turn have to raise rates to their retail customers – the opposite of what is intended in the CARES Act.

Conclusion

As discussed above, APPA is keenly aware that there are many key players in the nation's fight to respond to the coronavirus epidemic. All these players rely on electric power. Public power utilities are working to ensure that they have the physical, logistical, and financial resources needed to operate while keeping workers and customers as safe as possible. We will continue to work with federal and utility sector partners to address operational concerns, and we have identified above a list of priorities to help with our members' financial needs resulting from the pandemic. Each of these items will be of help to our members and their customers, but a critical keystone to this proposal is direct aid in the form of a direct forgivable loan to public power utilities.

For more information please contact:

Desmarie Waterhouse
Dwaterhouse@publicpower.org
(703) 869-2255

John Godfrey
Jgodfrey@publicpower.org
(202) 256-7710

Coronavirus and the Coal Fleet **Updated June 8, 2020**

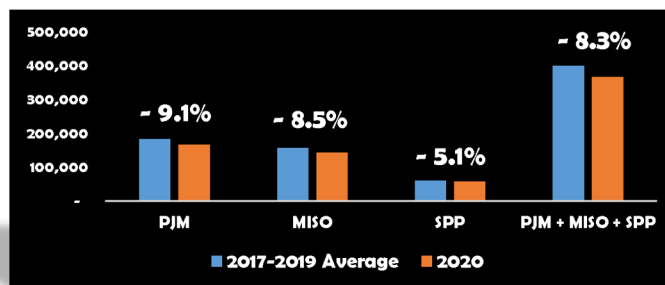
The coronavirus outbreak is doing enormous damage to small business, and it's also affecting major industries that are the cornerstones of the U.S. economy. One of those industries is the nation's fleet of coal-fueled power plants that provide electricity to consumers in 47 states. The months of March, April, and May saw the coronavirus cause significant economy-wide disruption. What effect did that disruption have on the coal fleet?

To answer that question, we compared data from March through May 2020 to data from the same months in 2017-2019 for PJM, MISO, and SPP. These are electricity grid operators whose multi-state footprints encompass more than half the U.S. and more than half the nation's coal fleet. We picked a three-year period to avoid having one unusual year bias the comparison. Below is a summary of what we found when we compared the two time periods.

Electricity demand dropped.

PJM, MISO, and SPP are Independent System Operatorsⁱ (ISOs) that together cover all or part of 28 states and DC. All three ISOs maintain readily accessible databases of operational data. These data show that electricity demand in March through May of this year was down 9.1% in PJM, 8.5% in MISO, and 5.1% in SPP, compared to March through May 2017-19. The combined drop was over 8%.ⁱⁱ

Change in Electricity Demand (% and GWh)

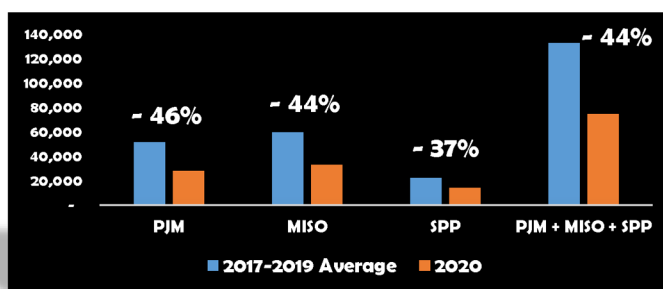


Coal-fired electricity generation fell dramatically.

PJM, MISO, and SPP have the three largest coal fleets (135,000 MW) of all the grid operators. March through May 2020 electricity produced by coal dropped

dramatically. PJM coal-fired generation declined by 46%, MISO by 44%, and SPP by 37%. The combined drop was nearly 44%.

Change in Coal-Fired Generation (% and GWh)



Low natural gas prices had a major effect on coal-fired generation.

The market price for coal was approximately 6% lower in March through May 2020 than March through May 2017-19. For natural gas, the decline was much more dramatic. Gas prices fell nearly 38% nationally, 44% in PJM, and 40% in both MISO and SPP.ⁱⁱⁱ These unusually low gas prices caused an increase in electricity generation from natural gas-fired power plants, which displaced coal-fired generation. Electricity generation from natural gas was 28% higher in PJM, 15% higher in MISO, and 8% higher in SPP.

Rail shipments of coal declined.

The vast majority of coal is shipped from mines to power plants by freight rail. In March through May 2020, these shipments fell by over 30% over the same period in 2019.^{iv} The decline in coal shipments was the largest of any freight rail category, although coal still accounted for more than one-fourth of the rail industry's carloads. Total freight rail volume in March through May 2020 declined by 12%.

Sensible policies are needed.

The coal fleet and its supply chain are regarded by the Department of Homeland Security as critical infrastructure because electricity is essential to the operation of just about everything we rely on. However, coronavirus has created a new challenge for the coal fleet and its suppliers.

We need the coal fleet not only during this crisis but also when the economy recovers because it is more reliable, resilient, and fuel secure than almost every other source of electricity. In addition, the price of coal is stable, whereas the price of natural gas, a major source of electricity, often increases dramatically in the winter.

Despite these advantages, 40 percent of the coal fleet has retired or is expected to retire. Sensible policies are needed to ensure the coal fleet can continue providing electricity. For example, the Federal Energy Regulatory Commission and grid operators need to value the resilience and fuel security attributes of the coal fleet the same way essential reliability services are valued now in power markets. Public utility commissioners should take the loss of these attributes into consideration when coal retirement decisions are being evaluated. And, it's time to end the exorbitant support for renewable sources of electricity that have received more than \$100 billion in subsidies for the past four decades.^v

ⁱ The nine regional transmission organizations, including MISO, SPP, and PJM Interconnection, were created to coordinate and administer their respective region's wholesale electricity market, and transmission network. These organizations are subject to the North American Electric Reliability Corporation (NERC) which derives its authority from the Federal Energy Regulatory Commission (FERC).

ⁱⁱ Load and generation data cited here was compiled from queries at the ISO websites, <https://pjm.com/markets-and-operations/data-dictionary.aspx>, <https://www.misoenergy.org/markets-and-operations/real-time--market-data/market-reports>, and <https://marketplace.spp.org/pages/generation-mix-historical>.

ⁱⁱⁱ Market price data are queried from S&P Global Market Intelligence. Henry Hub natural gas prices are used for national prices, Chicago Citygate for MISO prices, and TETCO M3 for PJM natural gas prices.

^{iv} Data is compiled from weekly freight rail traffic reports of the American Association of Railroads (weeks 10-22), available at <https://www.aar.org/data-center/>.

^v Congressional Research Service (CRS): "Energy Tax Policy: Historical Perspectives on and Current Status of Energy Tax Expenditures," Report for Congress R41227, May 2, 2011; "Energy Tax Incentives: Measuring Value Across Different Types of Energy Resources," Report for Congress R41953, March 19, 2015; "Energy Tax Policy: Issues in the 114th Congress," Report for Congress R43206, June 15, 2016; "The Value of Energy Tax Incentives for Different Types of Energy Resources: In Brief," Report for Congress R44852, May 18, 2017; and "The Value of Energy Tax Incentives for Different Types of Energy Resources," Report for Congress R44852, Updated March 19, 2019.



June 16, 2020

The Honorable Lisa Murkowski
Chairman
U.S. Senate Committee on
Energy and Natural Resources
304 Dirksen Senate Office Building
Washington, DC 20510

The Honorable Joe Manchin
Ranking Member
U.S. Senate Committee on
Energy and Natural Resources
304 Dirksen Senate Office Building
Washington, DC 20510

Dear Chairman Murkowski, Ranking Member Manchin, and Members of the Committee:

The Biotechnology Innovation Organization (BIO) is pleased to submit a statement for the record to the United States Senate Committee on Energy and Natural Resources Full Committee Hearing to Examine the Impacts of COVID-19 on the Energy Industry.

Introduction

BIO represents more than 1,000 members from the biotech ecosystem. Together we collaborate on our central mission – to advance public policy that supports a wide range of companies and academic research centers that are working to apply biology and technology in the energy, agriculture, manufacturing, and health sectors to conquer disease, sustain our environment, and advance nutrition and wellness.

Our members use biotechnology to enhance the agricultural value chain. These technologies support food production, sustainable fuels, renewable chemicals, and biobased products. This provides a cost-competitive and sustainable alternative to the petroleum value chain while generating added value through economic development, job creation, and public health. Companies are utilizing biological processes to convert biomass and waste feedstocks into everyday products, creating new markets for agricultural crops, crop residues, and waste streams – in addition to contributing to a circular economy.

Executive Summary

COVID-19 has clearly demonstrated the vulnerabilities that exist throughout the value chain supporting the energy sector. The disruptions caused by COVID-19 have been acutely felt by the sustainable fuels industry. With Americans heeding the calls of local and state governments to stay home to stop the spread of COVID-19, the need for transportation fuel, including sustainable alternatives, has plummeted. This dramatic disruption not only severely curtails the growth of sustainable fuels from advanced and cellulosic feedstocks, but also lays bare the

industries integral role in providing food grade CO₂ which is widely used in the treatment of drinking water and the preservation of food.

As Congress examines how to revive the economy through the energy sector, it is critical we adapt and accelerate innovation in this space to create a more resilient and self-sustaining economic recovery. Policies supporting the production and deployment of sustainable fuels and biobased manufacturing will allow us to rebuild our national economy and workforce in a forward-looking manner; bolstering our economic independence in a way that facilitates self-sufficiency. This “bioeconomy” will also create an energy sector that addresses climate change by reducing greenhouse gas emissions and enhancing human health through improved air quality.

Biobased Technologies Reducing Pollution in the Transportation Sector and Improving Environmental Health

As BIO stated in its comments to the U.S. Environmental Protection Agency’s (EPA) Scientific Advisory Board (SAB) *Review of COVID-19 Pandemic Scientific and Technical Issues to Inform EPA’s Research Actives*¹, “our member companies offer several solutions that can not only help combat this pandemic, but also lessen the impact of a future pandemic by helping to establish a resilient, sustainable bioeconomy.”

Harmful tailpipe emissions, including particulate matter (PM) from the transportation sector disproportionately affect areas comprised of minority populations. For example, according to a study by the Union of Concerned Scientists (UCS), African Americans and Latinos breathe in about 40 percent more particulate matter from cars, trucks, and buses than white Californians². Another UCS study found Northeast communities of color breathe 66 percent more air pollution from vehicles³.

According to the National Bureau of Economic Research, the United States saw fine particulate pollution increase 5.5 percent between 2016 and 2018. According to the American Lung Association, State of the Air report for 2019, more than four in ten Americans live in counties that have unhealthy levels of ozone pollution or particular matter.⁴ Prior to COVID-19, the World Health Organization⁵ found that 4.2 million deaths⁶ every year occur as a result of exposure to ambient air pollution. Since then, numerous studies have found that long-term exposure to levels of tiny particulate matter were linked to a significant increase in the mortality rate for COVID-19⁷.

¹ <https://yosemite.epa.gov/sab/sabproduct.nsf/0/2996BA363B41C2598525854C0048FA69?OpenDocument>

² <https://www.ucsusa.org/resources/inequitable-exposure-air-pollution-vehicles-california-2019>

³ <https://www.ucsusa.org/about/news/communities-color-breathe-66-more-air-pollution-vehicles>

⁴ <http://www.stateoftheair.org/key-findings/>

⁵ https://www.who.int/health-topics/air-pollution#tab=tab_1

⁶ https://www.who.int/gho/phe/outdoor_air_pollution/burden/en/

⁷ <https://www.newscientist.com/article/2241778-are-you-more-likely-to-die-of-covid-19-if-you-live-in-a-polluted-area/>

Sustainable fuels represent a readily available solution to addressing air quality by reducing tailpipe emissions including particulate emissions, hydrocarbons, and carbon monoxide, which helps prevent the formation of ground-level ozone. Data from 222 EPA sensing sites show that ozone levels have fallen during the period in which ethanol blending increased.⁸ Additional data from the University of Illinois-Chicago (UIC) show substantial reductions in particulate matter and benzene with the addition of biofuels.⁹ The American Lung Association, Upper Midwest Region found higher volumes of biofuels can reduce ozone-forming pollutants and evaporative emissions.¹⁰

Such benefits are not unique to ground transportation; research has demonstrated that sustainable aviation fuels (SAF) reduce contrails, particulate matter and mass emissions compared to conventional fossil jet fuels, with the potential to improve air quality near airports and reduce the climate impacts of aviation at high altitude.¹¹

Because of the clear air quality benefits associated with the use of sustainable fuels, members of both the Congressional Black Caucus and Congressional Hispanic Caucus have appealed to the EPA multiple times^{12,13} to raise biofuel volumes under the Renewable Fuel Standard. As the Committee explores ways to improve air quality and lessen the impact of pollution from the transportation sector, BIO encourages it to support the production of sustainable fuels by strengthening existing policies and ensuring future policies increase market access and spur development of new biofuel technologies across all transportation sectors.

Biobased Technologies Reducing Pollution in the Manufacturing Sector and Improving Environmental Health

Increasing the use of biofuels is not the only solution that BIO's members can provide to lessen air pollution caused by the energy sector. The production of petrochemicals, much of which are used in single use plastics are a major contributor to air pollution and climate change.

The impact petrochemical production has on human health in communities of color is exemplified in what has been called "Cancer Alley" in Louisiana¹⁴. As Beverly Wright, the founder and executive director of the Deep South Center for Environmental Justice in New Orleans stated in the New York Times April 29, 2020 article, '*A Terrible Price: The Deadly Racial Disparities of Covid-19 in America*', "As soon as I heard about Covid, I started getting nervous about the relationship between PM 2.5 and this virus."

⁸ <http://www.ethanolrfa.org/2014/12/real-world-ozone-and-particulate-data-expose-fallacy-of-minnesota-study/>

⁹ http://www.erc.uic.edu/assets/pdf/UIC_Cook_County_Slides.pdf

¹⁰ <https://www.cleanairstchoice.org/fuels/e85.cfm>

¹¹ <https://www.nature.com/articles/nature21420>

¹² https://www.bio.org/sites/default/files/2020-06/2015%20CBC%20Biofuels_EPA%20letter_Final.pdf

¹³ <https://www.bio.org/sites/default/files/2020-06/CBC-CHC%20biofuel%20letter.pdf>

¹⁴ <https://www.businessinsider.com/louisiana-cancer-alley-photos-oil-refineries-chemicals-pollution-2019-11>

As BIO highlighted in its statement¹⁵ for the record to the House Energy and Commerce Environment Subcommittee's March 4, 2020 hearing entitled, "Reduce, Reuse, Recycle, Reform: Addressing America's Plastic Waste Crisis," biobased products can provide a solution to the increasing rise in emissions in petrochemical plastic production.

Because bioplastics are derived at least in part from biomass, they have a smaller carbon footprint, with lower cradle-to-plant-gate greenhouse gas emissions than their fossil fuel-based counterparts.¹⁶ Substituting the annual global demand for fossil-based polyethylene (PE) with biobased PE would save more than 42 MMT of CO₂. This equals the CO₂ emissions of 10 million flights around the world per year.¹⁷ Replacing conventional 1,4-Butanediol (BDO) with biobased BDO would save over seven million tons of greenhouse gas emission per year, or the equivalent of taking 1.5 million cars off the road.¹⁸ In addition to reducing greenhouse gas emissions, biobased BDO can produce compostable plastic packaging, reducing plastic waste.

As the Committee explores options to improve the energy efficiency of the manufacturing sector and make it more resilient to future disruptions, BIO would encourage members to advance policies that support research and development and investment in biobased manufacturing processes, products and bioplastics derived from renewable or waste-based chemicals. Climate legislation or any economic recovery package should seek to address the ever increasing rise in emissions and pollution from petrochemicals and plastics and encourage the use of biobased products instead.

Conclusion

A sustainable post-COVID-19 recovery will require innovation driven by the development of sustainable fuels and biobased manufacturing. With sound public policy we can achieve our goal of rebuilding our national economy and workforce in a forward-looking, self-sufficient manner with the added benefit of addressing climate change and enhancing human health through improved air quality.

BIO looks forward to working with the Committee and Congress in developing pro-innovation policies and technologies to ensure a sustainable recovery.

¹⁵ <https://www.bio.org/letters-testimony-comments/bio-testifies-biobased-products-address-plastic-waste>

¹⁶ <https://ihsmarket.com/research-analysis/bioplastics-offer-a-smaller-carbon-footprint.html>

¹⁷ <https://www.european-bioplastics.org/bioplastics/environment/>

¹⁸ <https://www.genomatica.com/wp-content/uploads/Genomatica-Sustainability-and-Social-Responsibility-2019.pdf>

**Testimony of the Electric Power Supply Association
Regarding The Impacts of COVID-19 on the Energy Industry
Senate Energy and Natural Resources Committee
June 16, 2020**

The Electric Power Supply Association (EPSA)¹ and its members thank you for holding today's hearing to evaluate and understand the impacts of COVID-19 on the energy industry. Since the crisis began, the safety and well-being of our customers, employees, communities, and our nation has been the first priority for EPSA and America's competitive power suppliers. Critically, the state of our nation's power supply, generation, transmission, and delivery system remains strong, and we are in close coordination with our peers across the sectors to ensure service is delivered reliably and uninterrupted. Recently, the North American Electric Reliability Corporation ("NERC") had "not identified any specific threat or degradation to the reliable operation of the [Bulk Power System]. To its credit, the industry continues to operate the BPS in a reliable and secure manner, the pandemic introduces a significant degree of uncertainty that is without precedent."²

In order to help Americans adjust as seamlessly as possible, competitive power suppliers have been, and continue to be, focused on maintaining the availability of key personnel, such as power plant operators and control room staff who ensure the safe operation of power generating facilities. EPSA member companies have worked closely with public officials to develop safety

¹ Launched over 20 years ago, EPSA is the national trade association representing leading competitive power suppliers and marketers. EPSA members provide reliable and competitively priced electricity from environmentally responsible facilities using a diverse mix of fuels and technologies. Power supplied on a competitive basis collectively accounts for 40 percent of the U.S. installed generating capacity. EPSA seeks to bring the benefits of competition to all power customers. This testimony represents the position of EPSA as an organization, but not necessarily the views of any particular member with respect to any issue.

²North American Electric Reliability Corporation, *Special Report Pandemic Preparedness and Operational Assessment: Spring 2020*, Available at: https://www.nerc.com/pa/rmm/bpsa/Alerts%20DL/NERC_Pandemic_Preparedness_and_Op_Assessment_Spring_2020.pdf

protocols for power plant operators and other staff, procure Personal Protective Equipment, and develop comprehensive plans to make power plants and office settings as safe as possible for essential employees. Like others, it is possible that EPSA member company employees could be impacted by the virus. In anticipation of such a situation, competitive power suppliers have taken every step possible to ensure coverage of mission critical positions that keep the lights on. EPSA and our companies continue to closely monitor the situation and adjust tactics as needed.

However, no sector of the economy, including the energy sector, is immune from the effects of COVID-19. As Americans have taken steps to avoid contact with the virus, there has been and will be a shift in power demand from the workplace, restaurants, hotels, and other public venues, to home. Overall, this shift has also led to a reduction in the amount of power demanded. For example, in the PJM Interconnection (“PJM”), which is America’s largest power grid that serves 65 million customers, demand for power has declined between 8 and 10% from 2019 levels.³ In New York City, power demand has slipped as much as 20% from 2019.⁴ Lower power demand has yielded lower power prices, which are good for consumers, but the corresponding drop in revenues is challenging for power suppliers including EPSA members.

As we told Congress in March⁵, we believe the efforts of the federal government should be focused on ensuring the health and well-being of the American public. At a time when policy makers must dedicate substantial resources needed to combat this public health crisis and support American homes and businesses facing economic hardship, EPSA members are not asking for government relief, financial support, or subsidies. However, others in the industry have sought government relief in several forms. As reduced power demand continues into the foreseeable

³ *PJM Details COVID-19 Impacts to Electricity Demand*, April 15, 2020. Available at : <https://insidelines.pjm.com/pjm-details-covid-19-impacts-to-electricity-demand/>

⁴ *COVID-19 Related Updates*, Last Updated June 10, 2020. Available at : <https://www.nyiso.com/covid>

⁵ As an attachment to this testimony, we have included a March 19, 2020 letter from EPSA to Senate leadership.

future, Congress should be leery any requested “relief” via payments for energy not sold due to reduced power demand simply to boost a business’s bottom line. While we recognize that this crisis created legitimate expenses that otherwise would have not been incurred (*i.e.*, costs to procure Personal Protective Equipment) in order to maintain the reliability of the power grid, those expenses, are far different than reduced revenues as a result of decreased power demand.

Whereas regulated electric utilities receive guaranteed cost recovery from captive customers, competitive power suppliers are compensated entirely from the wholesale electricity markets, a fundamentally different approach. In most cases, competitive power suppliers must recover their costs through market-based payments, not single-issue rate filings before the Federal Energy Regulatory Commission (FERC) or a state public utility commission. As such, EPSC members are directly and tangibly impacted by changing market conditions, such as demand for, and the price of, power. We believe it is more appropriate for private investors – not consumers – to bear the risk of market fluctuations. Given that rate-regulated utilities earn guaranteed cost recovery from captive ratepayers, they are generally shielded from any market risk associated with lower-than-expected demand. At a time when unemployment is soaring, the last thing America should be asked to do is pay more for an essential service like electricity. Asking them to do it for the benefit of a powerful monopoly utility that already earns guaranteed cost recovery is even worse.

We urge Congress to focus resources on providing aid to those impacted the most by this crisis, not the energy industry. Should Congress consider providing aid to the energy industry as part of additional COVID-19 recovery legislation, that aid should be narrowly tailored to focus on expenses incurred directly as a result of actions taken in response to COVID-19 that ensured the reliable operation of the power grid. Reduced revenues as a result of reduced demand or

power prices should not justify aid. Nor should claims of reduced reliability, as NERC has made clear that the grid continues to function with high reliability. Importantly, any aid must be made equally available to all sectors of the industry and recognize the differences between traditional rate-regulated utilities and competitive suppliers dependent entirely on the market for revenues.

EPSA appreciates the attention given by the Committee to the impacts of COVID-19 on the energy industry and we look forward to working with the Committee going forward. This concludes our written testimony.

Attachment

March 19, 2020 EPSA Letter to Senate Leadership



March 19, 2020

The Honorable Mitch McConnell
Majority Leader, U.S. Senate
U.S. Capitol, S-230
Washington, DC 20510-7010

The Honorable Charles Schumer
Minority Leader, U.S. Senate
U.S. Capitol, S-221
Washington, DC 20510-7010
Sent via e-mail

Dear Leader McConnell and Leader Schumer,

As the national association representing competitive power suppliers, which provide more than 150,000 MW of power capacity to America's homes, businesses, hospitals, and emergency services, the Electric Power Supply Association (EPSA) writes to inform you of the steps we are taking to ensure that continued safe, reliable power is available even as our nation combats the unprecedented global threat posed by the novel Coronavirus and COVID-19. As Americans face other disruptions, reliable power is thankfully not currently anything to add to their concerns. The lights will stay on, hospitals will have the power they need to care for patients, and emergency services continue to have the power they need to ensure public health and safety.

The safety and well-being of our customers, employees, communities, and our nation is the first priority for EPSA and America's competitive power suppliers—as it is for the entire energy industry, with which we stand in solidarity during this time of crisis. The state of our nation's power supply, generation, transmission, and delivery system is strong, and we are in close coordination with our peers across the sectors to ensure service is not disrupted and power is available where needed. Our member companies' diverse power capacity is available to be deployed as needed, with resources working in tandem to provide power to support intermittent or otherwise unavailable supply. We have a strong track record of serving the grid in times of extreme weather or other emergencies.

At a time when policymakers must dedicate substantial resources needed to combat this public health crisis and support American homes and businesses facing economic hardship, our members are not asking for government relief, financial support, or subsidies. We don't do so in

normal times, and certainly not in emergencies. We believe the efforts of the federal government should be focused on ensuring the health and well-being of the American public. We are all in this challenging time together and we stand ready to help.

Competitors Working Together

As the impact of the novel Coronavirus/ COVID-19 progresses, competitive power suppliers are united with the entire energy industry, government agencies, and public officials to ensure Americans have a safe, reliable supply of electricity. In addition to longstanding planning efforts to prepare for extreme events, we have been working proactively and closely monitoring the situation for weeks to assess and prepare for eventual outcomes, while preparing and implementing the industry's three-phase pandemic plan. There is full engagement in this industry-wide effort up to the chief executive level of all EPSA member companies as we work to ensure our resources perform as needed when called upon. Policy differences are put aside to allow laser focus on one of the most disruptive events in recent American history. EPSA and its members are committed to doing our part to ensure the system performs at the highest level until and after the restoration of "normalcy."

Action From EPSA and Industry Leaders

- EPSA is part of the [Electricity Subsector Coordinating Council \(ESCC\)](#), which is the principal liaison between the federal government and the electric power sector, including utilities, public power, rural electric co-ops, and associated industries. We are cooperating to provide information and receive updates about how companies and service could be impacted. This effective coordination ensures that organizations have the resources that they need to continue providing electricity to customers throughout any disruptions.
- EPSA member company representatives are engaged on ESCC "Tiger Team" task forces addressing specific issues and operational concerns.
- EPSA is engaged in cross-association issue management with our fellow energy trade associations including API, AGA, NGSA, INGAA, APPA, and others to address reliability considerations.
- EPSA has proactively reached out to ISOs/RTOs to address any performance and/or reliability concerns.
- The ESCC has developed a [COVID-19 Resource Guide](#) to help the power industry make informed localized decisions in response to this evolving global pandemic, which will be updated as needed.
- The ESCC is holding coronavirus coordination calls twice a week with senior leadership from the Department of Energy, the Department of Homeland Security, the Department of Health and Human Services, the Centers for Disease Control and Prevention, and the Federal Energy Regulatory Commission to ensure that industry and government are working together to resolve any challenges that may arise during the health emergency.
- EPSA is working closely with member companies to understand how their operations may or may not be impacted in order to share that information with government and

others and communicate with media and the public. We are also working to understand what measures would help or impede our members' ability to serve the public.

- EPSA's member companies have been actively and constructively engaged with Governor's offices, as well as city, county and state health and emergency management offices, across the country.

Competitive Power Suppliers Respond

- Competitive power suppliers are focused on maintaining the availability of key personnel, such as power plant operators and control room staff who ensure the safe operation of power generating facilities.
- It is possible that EPSA member company employees could be impacted by the virus. In anticipation of such a situation, competitive power suppliers are taking every step possible to ensure coverage of mission critical positions.
- EPSA and our companies are closely monitoring the situation and adjusting tactics as needed.
- Competitive companies with retail services have implemented steps to ensure those facing hardship are not disconnected.

Implications for Power Demand, Markets, and Prices

Power markets are elastic in response to supply and demand. As Americans take steps to avoid contact with the virus, there has been and will be a shift in power demand from the workplace, restaurants, hotels, and other public venues to home. No one can say for sure what the exact impact on demand will be because we've never experienced such a shift in behavior. It's possible certain types of demand (such as residential) could increase and offset a portion of reductions in other demand.

While the impact on the equity markets has been significant, it's very early in the event and the long-term impact on investment and financing won't be known for a while.

Power markets have performed well. Energy prices have been relatively unchanged or slightly lower, which is helpful for consumers—especially those who may face decreased employment and other economic hardship.

Competitive markets are working as designed. As demand drops, so too will prices. A competitive market structure keeps generators and developers accountable, efficient, and responsive to consumer demand and the needs of the grid.

If demand drops, lower-cost resources like renewables and reliable natural gas, which are currently the cheapest and cleanest on the market, are likely to be selected. At the end of the day, the most affordable, most efficient and likely cleaner resources will be selected. Generators and investors, rather than taxpayers and customers, will bear the costs—leaving state budgets and funding available for other critical needs.

Power On

Competitive power suppliers have substantial generation capacity and stand ready to deliver power when called upon. We are ready and able to deploy that capacity and do our part to keep America's people and critical industries powered.

We will keep you updated if and when there is more news to share and encourage you to reach out at any time.

For information on how the electric power industry is responding as the Coronavirus/ COVID-19 situation evolves, visit www.electricitysubsector.org. For the American Petroleum Institute's Pandemic Planning Guide, visit www.api.org.

For all other information related to the Coronavirus/ COVID-19, visit www.cdc.gov.

Respectfully yours,



Todd A. Snitchler
President & CEO
Electric Power Supply Association

EPSA Member Companies

BP • Calpine • Cogentrix Energy • Competitive Power Ventures, Inc. • Diamond Generating Corporation • Eastern Generation LLC • Energy Capital Partners • GenOn • J-Power USA • LS Power • NRG Energy • Rockland Capital • Tenaska • TransAlta • Vistra • Shell

About EPSA

The Electric Power Supply Association (EPSA) is the national trade association representing America's competitive power suppliers. EPSA members provide nearly 150,000 MW of reliable and competitively priced electricity from environmentally responsible facilities using a diverse mix of fuels and technologies including natural gas, wind, solar, hydropower, geothermal, storage, biomass, and coal. EPSA seeks to bring the benefits of competition to all power customers. Learn more at www.epsa.org and connect with us on [LinkedIn](#) and Twitter [@EPSAnews](#).



Statement for the Record

Senate Energy and Natural Resources Committee Hearing to "Examine the Impacts of COVID-19 on the Energy Industry"
International Association of Drilling Contractors (IADC)

June 15, 2020

The International Association of Drilling Contractors has represented the global natural gas and oil drilling industry since 1940, and currently serves its 1,100+ members by providing industry-leading conferences, technical resources, accreditation programs and advocacy. Now in its 80th year, IADC is dedicated to promoting innovative technology and safe drilling practices that bring oil and natural gas to the world's consumers. IADC welcomes companies that share a commitment to improving safety, advancing drilling technology and enhancing personnel competence, and represents a wide range of businesses and organizations across multiple sectors.

IADC greatly appreciates the Committee's efforts to highlight the unique hardships the COVID-19 pandemic has brought to the American energy industry and its millions of dedicated workers. As Americans everywhere find themselves adapting to new and abrupt challenges, IADC's drilling contractor member companies are some of the hardest hit during this economic decline.

Since March 13th, over 65% of all U.S. land rigs have been idled due to loss of demand from COVID-19 restrictions and the flooding of the oil market by America's adversaries. With each onshore rig supporting 22 direct jobs, and each job supporting an average pay of \$60,000, a total of \$1,320,000 in direct worker salary is lost when just one rig is idled. This figure does not include losses of the many ancillary jobs that indirectly support our natural gas and oil drilling contractors through food, lodging, and other service roles, estimated at three jobs for every one rig job. With over 520 land rigs idled nationwide, nearly 46,000 Americans contributing to the upstream industry are currently out of work and more than \$686,400,000 in wages have been lost since March. In addition, 34% of our nation's offshore rigs are currently idled with a loss of more than 1,500 jobs (100-200 jobs per offshore rig) and over \$90,000,000 in wages. In a historical context, this is the industry's worst period of job and revenue loss since the 1986 collapse.

At the state level, the situation is even more bleak. Since March 13th, we have seen rig losses of 89% in Wyoming, 86% in Alaska, 79% in North Dakota, 76% in Oklahoma, 72% in Texas, and 57% in West Virginia. While some of IADC's members have been able to retain employees due to help provided in the Coronavirus Aid, Relief, and Economic Security Act (CARES Act), many companies are not able to sustain these significant losses for the long-run and will have to make critical decisions in the coming weeks and months.

At this time, IADC believes the best way policymakers can provide relief to our energy workers is by continuing to promote a data-driven approach to reopening the American economy that emphasizes public health and worker safety. Despite Congress' best intentions to legislate relief for affected sectors, a return to pre-pandemic economic activity and energy demand is the only way to stem the tide of energy industry job and revenue losses. Ultimately, what drilling contractor companies need is their customers, the operators, to undertake new drilling projects. That will put the drilling companies who own and operate the rigs, and their dedicated employees, back to work.

In lieu of a fully open and recovered economy, IADC's members request measures that provide more liquidity to help them with their cash flow. Specifically, these could come in the form of deferral of payroll taxes, or specific tax measures, including section 282 of the IRS code regarding net-operating losses (NOLs), or section 163j to relax interest expense limitation rules.

Finally, IADC would like to take this opportunity to highlight a long-time IADC member, Noble Corporation, an offshore drilling contractor company with operations in the Gulf of Mexico, for the way they have responded to the COVID-19 pandemic. In response to the developing shortage of medical safety equipment at local hospitals due to COVID-19, Noble donated much-needed gloves, N95 masks, face shields, goggles, chemical and Tyvek™ suits to the Houston Methodist Hospital system. The spare equipment was stored on the rigs Noble Jim Day and Noble Danny Adkins located in Port Aransas, TX. A team of Noble employees traveled to the rigs in the first month of the pandemic to gather, inventory, transport and deliver the materials to the hospital system. This is just one example of how IADC member companies have stepped up to help their communities in times of need.

IADC appreciates the Members of this Committee for their efforts to face this crisis head on, and thanks the Committee for holding this hearing to emphasize the unique and profound effects COVID-19 has had, and continues to have, on the American energy industry.



Written Testimony Submitted by the
International Liquid Terminals Association (ILTA)

Committee on Energy and Natural Resources
United States Senate
Washington, D.C.

Hearing to Examine the Impacts of COVID-19 on the Energy Industry
June 16, 2020

Chair Murkowski, Ranking Member Manchin, and Members of the Committee, thank you for the opportunity to contribute this written testimony for today's hearing on the effects of the COVID-19 pandemic on the U.S. energy industry.

The International Liquid Terminals Association consists of nearly 90 companies operating over 600 liquid terminal facilities across all fifty states and in 37 foreign countries. Our members connect producers, manufacturers, retailers, and consumers around the world in the bulk trade of liquid commodities, including petroleum and refined products. Collectively our membership accounts for over 80 percent of the bulk liquid storage capacity in the United States.

Terminal storage greatly enhances the flexibility of the supply chains for both petroleum and refined products and allows all players along these supply chains to respond to market fluctuations. Most liquid storage terminals do not own the crude oil and petroleum products stored at their facilities. Storage is a contracted service offered to those that own and sell the product, such as petroleum producers, distributors, or commodity traders. Under normal market conditions, imbalances between oil supply and demand are readily addressed using storage provided by crude oil terminals and tank farms located throughout the country. The United States has over 250 crude oil storage terminal facilities with a net storage capacity of about 500 million barrels.

Beginning this past spring, several developments caused a "perfect storm" that dramatically increased the demand for petroleum storage. First, gasoline demand fell precipitously due to lessened economic activity caused by COVID-19 stay-at-home orders. Second, foreign petroleum producers such as Russia and Saudi Arabia flooded markets with supply. Had it not been for these extraordinary events, which occurred nearly simultaneously, it is almost certain that the enormous storage capacity provided by our industry would have been extensive enough to balance supply and demand and provide valuable flexibility to oil markets.



Ordinarily, the United States has ample storage space even during oversupply events or periods of lax demand. According to the Energy Information Administration, the historical storage utilization rate of our crude oil terminals ranges from 45 to 55 percent. Even at last year's peak rate of 13 million barrels per day, the liquid storage industry would have sufficient capacity to completely absorb three weeks of total domestic oil production.

Even now at the beginning of summer, crude oil storage inventories persist at record levels – at, or very near, capacity at commercial terminals across the country. Although our members have taken every opportunity to consolidate existing stocks at all available storage facilities, there is little to no extra availability beyond existing contracts. Physically expanding storage capacity is a lengthy process that varies by the size of tank and permitting jurisdiction. Typically, however, it takes 12-18 months to permit and construct a new tank for a petroleum product terminal.

Meanwhile, these extraordinary circumstances have also placed unforeseen regulatory burdens on our industry. Most tanks used to store crude oil and refined products must undergo two kinds of inspections. In-service inspections are performed regularly, on an ongoing basis, with no need to drain a tank and move its contents elsewhere. Separately, terminal operators perform an out-of-service inspection on each tank every ten years. These inspections require draining and completely shutting down a tank to inspect inner areas normally not accessible. Because of this 10-year cycle, most terminal operators plan to take roughly ten percent of their tanks out of service for inspections in any given year.

The current, unprecedented demand for storage has meant that terminal operators have been unable to take tanks out of service. As a result, they have not been able to conduct the required out-of-service inspections. The Environmental Protection Agency seems to acknowledge the difficulty faced by terminal operators, particularly during the COVID-19 pandemic, but its guidance to date has been sparse and has not provided adequate certainty for terminal operators.

An even bigger concern arises when terminal operators contemplate what will happen when oil and refined product markets come closer into balance. While it will then be possible to take tanks out of service to perform the required inspections, there will almost certainly be a substantial backlog of tanks requiring these decadal inspections. Depending on how EPA approaches this problem, it could cause additional hardships for the industry.

Our goal in raising this issue today is to draw attention to the need for transparent guidance from EPA to ensure that our members are not penalized for circumstances beyond their control – either during the COVID-19 pandemic, or afterward when they will face a backlog in out-of-service inspection requirements. We need a plan that is fair and achievable, on a timeline that



is agreed between members of our industry and their regulatory partners. At the same time, our members would welcome the opportunity to work with EPA to allow for the use of alternative approaches to compliance that do not require taking tanks out of service during this period of extreme oversupply.

Thank you for using today's hearing to highlight the importance of the energy sector during these challenging and unprecedented times. If we can provide any further information related to the issues raised in this testimony, please do not hesitate to contact either ILTA President Kathryn Clay at kclay@ilta.org, or ILTA Vice President for Legislative Affairs Andy Wright at awright@ilta.org.



Large Public Power Council
Senate Energy and Natural Resources Committee hearing to examine the impacts of COVID-19 on the energy industry
June 16, 2020

Chair Lisa Murkowski
United States Senate
304 Dirksen Senate Office Building
Washington, D.C. 20510

Ranking Member Joe Manchin
United States Senate
304 Dirksen Senate Office Building
Washington, D.C. 20510

Subject: Request for direct relief for municipal electric utilities

Dear Chair Murkowski and Ranking Member Manchin:

As the Senate Energy and Natural Resources Committee examines the continued impacts of the COVID-19 pandemic on the energy sector, the Large Public Power Council, which represents 27 of the largest public power systems, would like to share our perspective. Collectively, our members provide low-cost, reliable electric service to over 30 million people across the Nation. We commend the Committee for holding this hearing to examine the impacts of COVID-19 on the energy industry and look forward to working with you to ensure that direct support for public power is included in any relief measures considered by Congress.

As essential infrastructure, electric utilities mobilized swiftly to prepare for, respond to, and help enable communities begin recovering from the pandemic. We have maintained reliable electricity service and public safety throughout the crisis. We have managed the health of our critical grid operators through a combination of isolation, sequestration, frequent testing and quarantines, as necessary. We are proud that our sector has responded well to this public health crisis.

The electric utility sector has been hit hard by the combination of extraordinary operational costs to keep essential electrical workers safe and working, reduced electricity demand and revenues, relaxed credit and collections activities, and an expected spike in uncollectable bills. This combination of financial impacts, even with aggressive cost containment measures, is depleting utility reserves and limiting the capital available for investment in projects that will stimulate local economies as our country recovers. Given that electricity is essential to all aspects of our communities' quality of life and economic health, it is vitally important that electric utilities remain financially strong.

Congress has taken decisive action to provide relief to individuals and businesses that have been directly affected by the pandemic. We appreciate the federal resources allocated to support utility customers, such as funding for LIHEAP to assist low income consumers with the payment of their utility bills; allowing small business loans to cover a portion of overhead costs such as utility payments; direct assistance to individuals; enhanced unemployment benefits; and, funding for certain state and local governments. In addition, we urge Congress to direct additional funding toward the public power sector in a more targeted manner.

LARGE PUBLIC POWER COUNCIL MEMBER COMPANIES

AMERICAN MUNICIPAL POWER, INC. (AMP) / AUSTIN ENERGY / CHELAN COUNTY PUB. NO. 1 / CLARK PUBLIC UTILITIES / COLORADO SPRINGS UTILITIES / CPS ENERGY / ELECTRICITIES OF NORTH CAROLINA, INC. / GRAND RIVER DAM AUTHORITY / GRANT PUD / IMPERIAL BRIGATION DISTRICT (IBD) / IEL / LONG ISLAND POWER AUTHORITY / LOS ANGELES DEPARTMENT OF WATER & POWER / LOWER COLORADO RIVER AUTHORITY / MISSISSIPPI POWER / MISSOURI PUBLIC POWER DISTRICT / NEW YORK POWER AUTHORITY / OHIO PUBLIC POWER DISTRICT / OREGON

1050 THOMAS JEFFERSON STREET NW / 5TH FLOOR / WASHINGTON, DC 20007 / LPPC.ORG



As you know, public power utilities such as our members are not-for-profit entities governed locally by elected boards that raise capital through the municipal bond markets. Given this structure, the policy tools appropriate to support public power utilities in response to the pandemic are different from those appropriate for supporting investor-owned utilities. In particular, tax credits for utilities will not provide relief to the public power sector.

In a previous letter to congressional leadership we requested congressional action on three priority areas related to the cost of public power utility borrowing for capital projects: restoration of the ability to advance refund municipal debt issuances; suspension of the mandatory sequestration of previously issued Build America Bonds (BABs); and reinstate the authority to issue direct pay bonds for energy projects without restrictive caps and allocation methods. In addition to these tax priorities, we seek direct federal relief to public power utilities to address the increased operating costs and lost revenue issues described above. This could come in the form of grants to public power utilities to cover the cost of unpaid utility bills or a new direct assistance program to public power customers.

Although Congress provided \$150 billion in relief to large state and local governments through the CARES Act, not all public power utilities are eligible for funding. There is the added challenge of accessing funding through the state and local processes. Accordingly, LPPC requests that a portion of any future state and local relief be specifically directed to public power utilities for use in dealing with pandemic-related costs and lost revenues. Across our LPPC member utilities we estimate the impact of the pandemic will be in the hundreds of millions of dollars. Without dedicated federal support, our utilities will be faced with significant operational shortfalls that will ultimately lead to increased utility bills for all of our customers.

We would be pleased to work with you and your staffs on these critically important issues. Thank you for your efforts on behalf of our public power utility members and the communities we serve.

Sincerely,

John Di Stasio
President
Large Public Power Council

Attachment: April 20th letter to Congressional Leadership



April 20, 2020

The Honorable Mitch McConnell
Majority Leader
United States Senate
Washington, D.C. 20510

The Honorable Charles Schumer
Minority Leader
United States Senate
Washington, D.C. 20510

The Honorable Nancy Pelosi
Speaker
United States House of Representatives
Washington, D.C. 20515

The Honorable Kevin McCarthy
Minority Leader
United States House of Representatives
Washington, D.C. 20515

Dear Majority Leader McConnell, Speaker Pelosi, Minority Leader Schumer, and Minority Leader McCarthy:

As the nation continues to respond to the rapidly changing demands of a global pandemic, public power is fully committed to serving the needs of our communities during these challenging times. Reliable, affordable electric power remains critical as we move from response to recovery. With this in mind, the Large Public Power Council (LPPC) expresses its appreciation to Congress for acting swiftly and providing much-needed resources to states, individuals, and programs that serve as essential safety nets for our customers. As Congress contemplates future relief and stimulus actions, LPPC seeks congressional support to ensure public power utilities have the tools, flexibility, and liquidity needed to meet these unprecedented circumstances. Specifically, LPPC urges additional support to low-income customers, assistance to ensure the costs for keeping essential employees on the job are not borne solely by customers, updates to the tax code to ensure public power's access to financing, and support for continued infrastructure development.

LPPC is an association of 27 of the nation's largest publicly-owned, not-for-profit electric utilities. LPPC members serve over 30 million customers in 21 states and the Commonwealth of Puerto Rico. LPPC utilities own and operate more than 71,000 megawatts of generation capacity, including wind, solar, hydroelectric, coal, natural gas, nuclear, and other renewable energy resources. LPPC members are firmly committed to maintaining affordable rates; their customers, on average, pay ten percent less than the national average for electricity.

LPPC utilities and our electric customers will be deeply impacted by the economic fallout of the ongoing COVID-19 pandemic. Low-income customers, displaced workers, and small businesses may be unable to pay their electric bills. Costs associated with disruptions to ongoing capital projects, increased workforce and family support program costs, and newly-mandated sick leave and Family Medical Leave Act requirements will increase the pressure on cost-of-service electric rates for already-burdened consumers.

LARGE PUBLIC POWER COUNCIL MEMBER COMPANIES

AMERICAN MUNICIPAL POWER, INC. (AMP) / AUSTIN ENERGY / CHELAN COUNTY PUD NO. 1 / CLARK PUBLIC UTILITIES / COLORADO SPRINGS UTILITIES / CPS ENERGY / ELECTRICITIES OF NORTH CAROLINA, INC. / GRAND RIVER DAM AUTHORITY / GRANT PUD / IMPERIAL IRRIGATION DISTRICT (IID) / I&A / LONG ISLAND POWER AUTHORITY / LOS ANGELES DEPARTMENT OF WATER & POWER / LOWER COLORADO RIVER AUTHORITY / MEAD POWER / NEBRASKA PUBLIC POWER DISTRICT / NEW YORK POWER AUTHORITY / OMAHA PUBLIC POWER DISTRICT / ORLANDO UTILITIES COMMISSION (OUC) / PLATTE RIVER POWER AUTHORITY / PUERTO RICO ELECTRIC POWER AUTHORITY / SMUD / SALT RIVER PROJECT / SANTEE COOPER / SEATTLE CITY LIGHT / SNOHOMISH COUNTY PUD NO. 1 / TACOMA PUBLIC UTILITIES

1050 THOMAS JEFFERSON STREET NW / 5TH FLOOR / WASHINGTON, DC 20007 / LPPC.ORG



As Congress contemplates providing additional assistance in a Phase IV or Phase V relief and economic stimulus package, LPPC recommends that the following provisions be included to provide near term relief to our customers and communities and allow for timely investments in reliability, resilience and grid modernization as we pivot to recovery:

USE FEMA DISASTER RELIEF FUND TO COVER PANDEMIC-RELATED COSTS

Utilities are working around the clock to ensure our workforces are safe and healthy in order to provide reliable electric services during this crisis. Our response has required unprecedented coordination of processes and protocols, personnel, and supplies previously unseen in response to natural disasters and weather events. In addition to screening, testing, and isolating employees, some utilities have been required to sequester essential staff. Utilities are bearing increased labor costs, and costs of protective gear, on-site lodging, food services, laundry, deep sanitation of shared space, and other essential services. With increased costs coupled with declining loads, a stalling economy, and our strong desire to accommodate customers' needs to delay bill repayment and shutoffs, it is imperative that public power utilities are able to seek reimbursement through FEMA's Disaster Relief Fund. LPPC urges Congress to provide robust funding for this program and ensure FEMA regulations allow for reimbursement of these expenses.

INCREASE FEDERAL SUPPORT FOR LOW-INCOME HOME ENERGY ASSISTANCE

LPPC applauds Congress for appropriating \$900 million through the CARES Act for LIHEAP. But we cannot stop there. LIHEAP is the national program that provides financial assistance to households unable to pay their home heating and cooling bills. LIHEAP is a proven program to assist the country's most vulnerable. According to the National Energy Assistance Directors' Association, full funding for LIHEAP would serve over 4.4 million more families and seniors in need. LIHEAP will need significantly more funding as unemployment soars. LPPC requests that this program be given the resources it needs to meet the urgency of the situation.

It is important to note that LPPC member utilities have already suspended disconnects for all customer classes, and are also offering a variety of payment plans and support tailored to the unique needs of the communities they serve. As not-for-profit utilities, our members must continue to have the flexibility to respond to the particular needs of their communities. Instead of one-size-fits-all federal mandates that may put public power operations at risk, Congress should support proven programs such as LIHEAP to provide essential support to low-income populations. LPPC members are committed to working with their local governing bodies to meet the needs of their customers, and working with Congress to ensure adequate resources are available to cover nonpayment of utility bills.

RESTORE ADVANCE REFUNDING OF MUNICIPAL BONDS

LPPC members rely on tax-exempt municipal bonds to fund their energy infrastructure projects. Issuing municipal bonds makes important energy infrastructure investment cheaper for our customers and communities and frees up resources for other needs. Fully restoring the ability for state and local governments to advance refund these bonds so our members can take advantage of favorable interest rates and structure their bond payments in light of the impact of the pandemic will provide even more funds that could help alleviate costs for low income and small business customers.



END MANDATORY SEQUESTRATION FOR BUILD AMERICA BONDS

Build America Bonds (BABs) were once effective in helping finance public infrastructure projects at reduced borrowing costs. Unfortunately, the ability to issue BABs expired in 2010. In addition, the subsidy payments on existing bonds have been negatively impacted by across-the-board cuts – sequestration – that went into effect on March 1, 2013.

LPPC urges Congress to end mandatory sequestration's adverse effects on BABs and other tax credit bonds. Although BABs were a successful tool to deliver capital to energy projects, mandatory sequestration has cost LPPC members hundreds of millions of dollars. These extra costs get passed on to customers through higher electricity rates, at a time when many of our customers are facing economic distress.

AUTHORIZE ISSUANCE OF NEW BUILD AMERICA BONDS

LPPC urges Congress to build on the successes of BABs and reinstate the authority to issue direct pay bonds for energy projects without restrictive issuance caps and allocation methods. In the past decade, public power utilities have invested more than \$100 billion in energy infrastructure, with many more projects scheduled to begin construction. Expanding the financing tools available to public power utilities, such as by reinstating authority to issue BABs (or other direct pay bonds) to support infrastructure investment without exposure to future sequestration, will enable LPPC utilities to continue investing in needed infrastructure improvements.

ENSURE THAT SUPPORT FOR INFRASTRUCTURE INVESTMENT IS AVAILABLE TO PUBLIC POWER

As federal policies to stimulate infrastructure investment are considered in subsequent COVID-19 response legislation, it is critical that support for public power investment in electricity facilities is included. Like publicly-owned transportation, water, and wastewater systems, the nation's electricity infrastructure is essential to the efficient operation of the economy. Federal funding, financing, or incentives for infrastructure should be available to support electric infrastructure investments by public power utilities.

STREAMLINE INFRASTRUCTURE PERMITTING

It is imperative that Congress couple federal investment in our nation's infrastructure with smart streamlining of federal permitting processes. It is now more important than ever that federal agencies provide for efficient review of permit applications related to energy infrastructure projects. Inter-agency coordination in federal permitting is critical, as is effective federal-state collaboration.

The members of LPPC have long embraced their role as partners with the communities that they serve. Deploying these effective, simple, and tested measures will allow public power utilities to enhance these community partnerships during these challenging times. While Congress contemplates federal funding for industries impacted by the current economic crisis, LPPC urges Congress to enable the use of public financing tools that have been proven to provide enormous benefits to American citizens and businesses.

As providers of critical infrastructure services, LPPC members recognized the need to swiftly prepare for and respond to the novel coronavirus. We have policies and procedures in place to ensure reliable power service. But unlike our responses to a hurricane or cyber incident, we must take additional steps here to



protect our workforce and assets and meet the needs of our customers for an undetermined period of time under constantly changing and challenging circumstances. Public power plays a key role in the response to COVID-19 in the many communities we serve, and LPPC strongly urges Congress to ensure that support for public power is included in any further legislation considered in response to the pandemic.

Sincerely,

A handwritten signature in black ink, appearing to read "JD Stasio", is positioned above the printed name.

John Di Stasio
President
Large Public Power Council



June 24, 2020

The Honorable Lisa Murkowski
Chairman
Senate Committee on Energy
and Natural Resources
304 Dirksen Senate Office Building
Washington, DC 20515

The Honorable Joe Manchin
Ranking Member
Senate Committee on Energy
and Natural Resources
304 Dirksen Senate Office Building
Washington, DC 20515

Re: Statement for the Record for Full Committee Hearing to Examine the Impacts of COVID-19 on the Energy Industry (June 16, 2020)

Dear Chairman Murkowski and Ranking Member Manchin:

Louisiana Mid-Continent Oil and Gas Association represents the entire oil and gas industry in Louisiana and in the Gulf of Mexico. We appreciate your commitment to a robust domestic oil and gas industry, and especially appreciate your attention to the impacts COVID-19 has had on energy businesses throughout our country. While COVID-19 impacts have been felt broadly throughout every aspect of our country's economy, we feel the impacts of the pandemic have been especially pronounced in the Gulf of Mexico offshore operations.

As you know Gulf of Mexico (GOM) operators are no stranger to economic downturns and other natural and man-made disasters causing industry-wide consequences. However, the past three months have certainly challenged this industry in unique and long-lasting ways. We are optimistic we will recover, especially with thoughtful attention and the right policy solutions from decisionmakers like you.

As you know over the past three months, oil prices have plummeted to historic lows, reaching negative prices for the first time in history. Although prices have rebounded to some degree as the country has begun reopening its economy, prices remain 50% lower than in January 2020. Indeed, even prior to the March OPEC+ global price and economic shutdown from COVID-19, GOM operators were enduring a decline. The unprecedented 'perfect storm' of global events significantly accelerated the decrease in activities.

At least \$40 billion of capital expenditures were cut among offshore energy businesses, delaying, significantly reducing in size, or eliminating altogether important energy exploration and production projects. As of May 15th, rig counts in the GOM are the lowest on record and well starts are projected to be the fewest since 1959. At least 300,000 barrels per day were shut-in in the GOM and, thousands of jobs were lost. A recent study found at least 50,000 jobs nationwide linked to GOM production will be lost nationwide. In Louisiana alone, nearly half of oil and gas



730 North Blvd. • Baton Rouge, LA • 70802 • 225.387.3205 • www.lmoga.com

June 24, 2020
Page 2

businesses projected bankruptcy; and according to Louisiana Workforce Commission, coastal parishes where many oil and gas servicemen and women live and work have seen the highest local jobless rate since the 1980s, losing 2,500 jobs associated with the industry in one month alone with deeper cuts following.

The loss of jobs and capital expenditure investments is directly linked to the livelihood of Gulf coast communities and local communities across the country in many different ways. As you are aware, the Gulf of Mexico Energy Security Act (GOMESA) allows Gulf producing states to share in revenue generated from offshore production. These states used these revenues to harden their local communities from catastrophic hurricanes and combat coastal land loss. Offshore production also contributes most revenue to the Land and Water Conservation Fund (LWCF) which communities across the country benefit from for outdoor recreation opportunities and wildlife protection. With enactment of the Great American Outdoors Act, offshore revenues will have a further reaching direct benefit to our National Parks and other public assets. Investments lost over the past three months mean less investment in these important conservation programs that the state of Louisiana and communities across the country cannot afford.

GOM operators remain committed to securing and protecting our nation's global energy dominant role; but we encourage Congress and the Administration to take into consideration the unique nature of offshore energy production and forge collaborative solutions to sustain our industry. Offshore energy requires 10 to 20 times more investment upfront than onshore production making offshore projects significantly more capital intensive and margins exceptionally thinner. Therefore, LMOGA strongly supports efforts in the Administration and Congress to provide temporary royalty relief, lease suspensions and other lease term relief measures as soon as possible. We also must explore ways to continue and expand access to leasing in the Outer Continental Shelf.

Lease sale revenue has declined over 91% within the past 10 years and the number of operators in the GOM have dwindled from over 100 to 50. If Congress and the Administration do not take bold, broad actions now to sustain our American offshore production, we may continue to cede important expertise and jobs to other countries.

Thank you for this opportunity to provide perspective from GOM operators. We are happy to answer any questions or provide further information if necessary.

Sincerely,

Tyler Gray
President & General Counsel

Statement for the Record

On behalf of the
National Rural Electric Cooperative Association

Before the
Senate Committee on Energy and Natural Resources

**Hearing: “To Examine the Impacts of COVID-19 on the Energy
Industry”**

June 16, 2020

Contact Info:
Billie Kaumaya
NRECA
4301 Wilson Boulevard
Arlington, VA 22203
Billie.Kaumaya@nreca.coop

Introduction

The National Rural Electric Cooperative Association (NRECA) represents more than 900 electric cooperatives. America's electric cooperatives are energy providers and engines of economic development for more than 20 million American homes, businesses, farms and schools across 48 states. Electric cooperatives play a vital role in transforming local communities.

On behalf of America's electric cooperatives, we thank the Committee for holding a hearing to examine the impacts COVID-19 is having on the energy sector. The fallout from the coronavirus pandemic has the potential to be catastrophic across many rural communities. As local business and industry close their doors and hardworking Americans lose their jobs, new economic projections show the nation's electric cooperatives and their consumer-members could suffer an immediate and lasting impact. Reduced electricity sales coupled with an increase in unpaid bills is forecast to cause the nation's electric co-ops to lose \$10 billion in revenue through 2022.

Not-for-profit electric cooperatives have no shareholders, are owned by the communities they serve and routinely return excess revenue to their consumer-members. Lost revenue can severely constrain the ability of certain electric co-ops to meet the needs of their community. Rural electric co-ops face high fixed costs, including maintaining 42% of the nation's electric distribution lines to serve just 13% of the nation's electric consumers.

We submit this statement to provide insight into how COVID-19 continues to impact electric cooperatives. As you consider additional steps to address the ongoing crisis, please consider that 1 in 8 Americans depend on a not-for-profit electric cooperative to keep the lights on and to empower their local economy. Electric cooperatives are built by, and belong to, the communities they serve. That focus on community drives cooperatives as they respond to evolving COVID-19 challenges and local concerns.

Financial Impact of COVID-19 on Electric Cooperatives

Declining electricity sales: Electric cooperative operating revenues are expected to decline by **\$7.4 billion** as electricity sales fall by 5% over the 2020-2022 period due to lower U.S. economic output caused by COVID-19 mitigation practices.

Electricity powers the American economy and a stalled economy uses less energy. As GDP growth falls in the wake of COVID-19, co-op electricity sales are projected to decline. Cooperative electric sales are expected to decrease 6.1% in 2020, 6% in 2021, and 3% in 2022, for an overall drop in sales of 5% over the period when compared to pre-COVID-19 projections, according to NRECA's analysis.

Unpaid Bills: A surge in unemployment combined with the effects of suspending disconnections is expected to increase balances of unpaid bills for electric cooperatives to **\$2.6 billion** through 2022.

Higher unemployment rates historically have been associated with higher levels of unpaid electric bills (delinquent payments of 60 days or longer) as consumers struggle to make ends meet. Most states, at some point, have put in place mandatory or voluntary disconnection moratoria in response to the COVID-19 crisis. Disconnection moratoria have been shown to raise delinquency rates as shut-offs are disallowed. These moratoria may also be perceived as an extension of a broad financial safety net with the effect of temporarily raising the delinquency rate to unusually high levels.

Overall, the effects of higher unemployment rates and disconnection moratoria on delinquency rates will be greatest in 2020 before gradually declining through the end of 2022. Delinquencies are expected to peak at \$1.8 billion in 2020, before declining to \$640 million and \$160 million in 2021 and 2022, respectively, as the unemployment rate improves and moratoria are lifted.

Solutions

As Congress continues to address the ongoing health and economic crisis, please consider these proposals to give electric co-ops the flexibility and relief to meet the immediate needs of their communities while ensuring the continued delivery of affordable, reliable electricity.

1. **Allow electric co-ops to take advantage of unprecedented low interest rates by repricing RUS debt without penalty.** Nearly half of all electric cooperatives depend on the Rural Utilities Service (RUS) to finance their operations. Collectively, electric cooperatives hold over \$40 billion in RUS Electric Program loans. Many of these older RUS electric loans are set at significantly higher interest rates than the current market. However, unlike other consumer loans, RUS debt cannot be refinanced without penalty. A prudent step toward providing electric cooperatives with near-term flexibility is to allow the repricing of RUS loans at today's low rates without penalties. This will provide significant cost savings for the co-op and the community in the near term and establish a stronger foundation for the future.
2. **Increase the amount of lending available under the RUS Guaranteed Underwriter Program.** The Guaranteed Underwriter Program provides guarantees for loans made to electric cooperatives by private cooperative banks such as the Cooperative Financing Corporation and CoBank. These not-for-profit lenders are an essential part of the financing portfolio for our members and are agile in times like these.
3. **Increase Federal Assistance for Utility Payments:** Many states have mandated moratoria on utility disconnections and some members of Congress have proposed a similar federal moratorium. NRECA estimates that co-ops will see an unpaid bill total of \$2.6 billion due to a surge in unemployment, combined with the effects of suspending disconnections. Giving American families and businesses the support they need to help pay their utility bills is essential.

Programs Addressing Utility Bill Assistance: The House-passed "HEROES Act" includes utility payments as eligible expenses in both the emergency rental assistance and mortgage assistance programs. Utility assistance should be included in any program to provide relief for American families.

\$4.3 billion for LIHEAP: The Low Income Home Energy Assistance Program (LIHEAP) provides critical home heating and cooling help to millions of vulnerable American families. During the pandemic, LIHEAP is assisting newly unemployed and furloughed families afford their utility bills. We believe additional LIHEAP funding is needed.

Conclusion

Thank you for your consideration of these proposals. America's Electric Cooperatives are prepared to work with you to support bipartisan, emergency solutions to benefit the communities we serve and the nation.

June 15, 2020



The Honorable Lisa Murkowski
Chairman, Committee on Energy & Natural
Resources
United States Senate
Washington, DC 20510

The Honorable Joe Manchin
Ranking Member, Committee on Energy &
Natural Resources
United States Senate
Washington, DC 20510

Dear Chair Murkowski and Ranking Member Manchin,

Thank you for your leadership in holding the hearing today on the impact that COVID-19 has had on the energy sector. I write to share with you the impact of the COVID-19 pandemic on the American solar industry. While the entire U.S. economy has been deeply impacted by this crisis, the solar energy workforce has been hit particularly hard. Data we have released shows that instead of adding more than 50,000 jobs during the first half of the year as we originally projected, the industry has lost more than 72,000 workers since February.

Tens of thousands of solar projects have been cancelled or postponed, putting billions of dollars of economic investment on hold. In addition, a significant drop in solar deployment would set the U.S. back several years in our efforts to combat climate change, a setback we cannot afford.

The impact of job loss and work slowdowns from COVID-19 has been greatest in the distributed solar markets, which includes rooftop projects for homes and businesses. These projects will experience a combined 32% reduction in the amount of solar installed in 2020 compared to pre-COVID forecasts. Growth in the utility-scale sector will be lower than projected before COVID-19 and will be contingent on economies safely reopening and the return of consumer demand. In 2020, overall solar growth will be about 10% less than what we originally forecasted. From 2020-2025, we'll install 3.6 gigawatts less than expected, relative to our projections last quarter.

One of the biggest challenges we continue to hear about is financing. The tax equity market has tightened, an important tool that companies use to finance solar projects of all sizes. Many companies are having difficulty securing this financing, causing billions of dollars' worth of shovel-ready projects to be delayed or cancelled. These types of challenges have a disproportionate impact on small businesses and newer companies, meaning that hardworking solar entrepreneurs will face the brunt of the economic impact from COVID-19.

While our growth has been muted and economic uncertainty remains, with the right policies, solar can help rebuild the American economy faster and stronger than before.

Solar has a long history of going to work for our economy and continues to be one of the fastest-growing industries in the United States, adding jobs five times faster than the overall economy from 2014 to 2019. Solar jobs are good jobs that pay mortgages and keep food on the table for tens of thousands of families. Solar projects also help to generate private investment and local tax revenue, supporting economic development and local governments in every state. Investing in solar can help us recover faster from this awful crisis.

As we think about rebuilding our economy, Congress has the unprecedented opportunity to deploy clean energy and create an even stronger foundation for our nation for years to come. Congress should invest in solutions such as solar that are a win-win for America, helping us add jobs, make progress on climate change, and inject tens of billions of dollars into the economy.

June 15, 2020



Congress can help by allowing solar companies to fully utilize the policy tools it has already developed and approved in bipartisan fashion — namely the solar Investment Tax Credit (ITC) — during this economic crisis.

We propose that Congress help alleviate tax equity concerns by creating a direct pay system, which would jumpstart the solar economy and solidify clean energy's leadership in the power sector. We also propose delaying the ITC phasedown to give companies an opportunity to adapt to delays and other disruptions caused by the COVID-19 pandemic. Looking ahead, infrastructure measures that enhance our resilience through solar + storage and grid modernization can bolster national security and strengthen our ability to respond to major crises. In addition, policies that help hire and train a diverse solar workforce will help us create even more job opportunities for new entrants, enabling the industry to funnel jobs into underserved communities and reach more Americans with clean and affordable energy.

Investing in solar represents a unique opportunity to both rebuild our economy and create a stronger foundation for years to come. As always, we stand ready to partner with you to help create America's energy future.

Sincerely,

A handwritten signature in black ink, appearing to read "Abigail Ross Hopper".

Abigail Ross Hopper, Esq.
President & CEO
Solar Energy Industries Association

