SOLVING THE CLIMATE CRISIS: KEY ACCOMPLISHMENTS, ADDITIONAL OPPORTUNITIES, AND THE NEED FOR CONTINUED ACTION

HEARING

BEFORE THE

SELECT COMMITTEE ON THE CLIMATE CRISIS HOUSE OF REPRESENTATIVES

ONE HUNDRED SEVENTEENTH CONGRESS

SECOND SESSION

HEARING HELD
DECEMBER 6, 2022

Serial No. 117–24

www.govinfo.gov
Printed for the use of the Select Committee on the Climate Crisis

U.S. GOVERNMENT PUBLISHING OFFICE
50–065 WASHINGTON : 2022

SELECT COMMITTEE ON THE CLIMATE CRISIS

ONE HUNDRED SEVENTEENTH CONGRESS

KATHY CASTOR, Florida, *Chair*

SUZANNE BONAMICI, Oregon	GARRET GRAVES, Louisiana, *Ranking Member*
JULIA BROWNLEY, California	GARY PALMER, Alabama
JARED HUFFMAN, California	BUDDY CARTER, Georgia
A. DONALD MCEACHIN, Virginia *	CAROL MILLER, West Virginia
MIKE LEVIN, California	KELLY ARMSTRONG, North Dakota
SEAN CASTEN, Illinois	DAN CRENSHAW, Texas
JOE NEGUSE, Colorado	ANTHONY GONZALEZ, Ohio
VERONICA ESCOBAR, Texas	

ANA UNRUH COHEN, *Majority Staff Director*
SARAH JORGENSON, *Minority Staff Director*
climatecrisis.house.gov

* *Deceased*.

CONTENTS

STATEMENTS OF MEMBERS OF CONGRESS

WITNESSES

SUBMISSIONS FOR THE RECORD

SOLVING THE CLIMATE CRISIS: KEY ACCOMPLISHMENTS, ADDITIONAL OPPORTUNITIES, AND THE NEED FOR CONTINUED ACTION

TUESDAY, DECEMBER 6, 2022

HOUSE OF REPRESENTATIVES,
SELECT COMMITTEE ON THE CLIMATE CRISIS,
Washington, DC.

The committee met, pursuant to call, at 1:15 p.m., in Room 2167, Rayburn House Office Building, Hon. Kathy Castor [Chairwoman of the committee] presiding.

Present: Representatives Castor, Bonamici, Brownley, Huffman, Levin, Casten, Neguse, Escobar, Graves, Palmer, Carter, Armstrong, and Crenshaw.

Ms. CASTOR. The committee will come to order. Welcome to the Solving the Climate Crisis: Key Accomplishments, Additional Opportunities, and the Need for Continued Action. Without objection, the Chair is authorized to declare a recess of the committee at any time.

Statements, documents, and motions must be submitted to the electronic repository, to SCCC.repository@mail.house.gov. And members or witnesses experiencing technical problems should inform the committee staff immediately.

Before we begin the hearing today, I would like to take a moment to reflect upon our friend, Representative Donald McEachin, whose untimely death has left a void here in Congress and our committee.

Donald was a life-long public servant. He served the people of Richmond for decades, and here in Congress, he changed the conversation on climate change in critical ways, bringing new voices into the policymaking process, listening to the needs of communities of color, tribes, low-income communities, and other vulnerable Americans.

Environmental justice was at the heart of his work. He helped redefine equitable solutions for tackling the climate crisis, and I trust that his example will inspire all of us to be faithful public servants.

So let's honor Representative Donald McEachin at this time with a moment of silence.

Amen.

Well, thanks, everybody. Today, we will examine the historic accomplishments of the 116th and 117th Congresses in tackling the climate crisis and investing in a clean energy economy and a healthy, resilient, and just America.

I will now recognize myself for a 5-minute opening statement.

Well, here we are at the end of the 117th Congress, and we can take great pride in our historic accomplishments in spurring the clean energy economy and progress in solving the climate crisis. It is very important that we review our progress and then look ahead to further action.

Speaker Nancy Pelosi created our Select Committee at the start of the 116th Congress in 2019, and directed us to develop the policies and innovations needed to tackle climate change. To a Member, she appointed climate champions from the Democratic Caucus that reflected the know-how and commitment to tackling this enormous task.

And we were joined by Republican members interested in solutions, and we got right to work. We followed the science, and we bridged coalitions. We channeled the energy of climate protests into meaningful policy, and we built a framework for action that charted a path to net zero, and we helped Congress turn hundreds of solutions into law.

From the outset, we have been intensely focused on helping families and businesses across America create good paying local jobs, slash energy bills, bolster domestic manufacturing, uplift disadvantaged communities, and position America to lead the world in the emerging clean energy economy.

We are so proud of our progress, but there is more—much more—to do. That is why we have devoted this hearing not just to historic accomplishments, but also to future action as we prepare to release an updated Climate Crisis Action Plan to spur further innovation.

Our work remains urgent. Climate disasters are putting America's security and stability at serious risk and threatening our economy, our way of life, and our communities. Higher costs, harsh impacts, and greater injury and loss of life are upon us now.

This summer, brutal heat waves shattered more than 7,000 daily temperature records across the nation. Persistent drought is drying up our life-giving lakes and rivers, including the vital Colorado River, and many of the lakes that support local economies across the West.

Wildfires and massive floods are unleashing unprecedented levels of destruction, so are climate-fueled storms like Hurricane Ian which is now predicted to be the second costliest hurricane in history.

Given the growing cost of these catastrophes, House Democrats have used the power of our majority to take bold action to solve the climate crisis. That includes the Bipartisan Infrastructure Law, which makes communities more resilient to droughts, wildfires, storms, floods, heat waves, and other extreme weather events.

And it includes our passage of the Inflation Reduction Act, which is the largest clean energy and climate investment in U.S. history. And it puts the United States on a path to reducing heat-trapping pollution by roughly 40 percent by 2030.

Our Action Plan provided a vital roadmap for climate action, and we used every opportunity and every piece of legislation over the past few years to lower costs, through cleaner, cheaper energy, and to build safer, more resilient communities.

Solving the climate crisis is hard work, but the results already are encouraging, and the opportunities are exciting. Thanks to our work incentivizing clean technologies, companies in states like Kansas, Kentucky, North Carolina, and Alabama are racing to manufacture the batteries and technologies of the future, creating thousands of jobs along the way.

Car manufacturers in states like Michigan and Ohio are investing in our workers, as they build electric vehicles that will help reduce pollution. Utilities are increasingly adding cheap wind and solar into their energy mix, lowering costs for consumers and bolstering our energy independence.

And we are deploying zero-emission school buses, clean postal trucks, and other clean investments that put families over polluters.

Our final majority staff report that we will release next week will look at these key victories, and identify new opportunities to meet the goals of our Climate Crisis Action Plan.

As the 117th Congress draws to a close, it also will serve as a reminder that the fight for climate action must continue. Guided by science, rooted in justice, and powered by American workers, we have a moral obligation to our kids and future generations to continue our work.

And I will add, with great humility, it has been an honor and a privilege to lead such an impactful committee, with an incredibly talented professional staff, led by Staff Director Ana Unruh Cohen. You all have truly made a difference, and I am grateful to you for answering the call to service to help solve the climate crisis and give our kids a fighting chance for a liveable planet.

Thank you again, and at this time I would like to recognize the Ranking Member, Garret Graves, and Garret, I want to thank you personally, and all of the Republican members, for your service on this committee, and I trust in future years we will forge some bipartisan work together to help solve the climate crisis, and do it in a way that lifts up all communities across this great country. Thank you so much for being my partner.

[The statement of Ms. Castor follows:]

Opening Statement of Chair Kathy Castor

Hearing on "Solving the Climate Crisis: Key Accomplishments, Additional Opportunities, and the Need for Continued Action"

December 6, 2022

As prepared for delivery

Here at the end of the 117th Congress, we can take great pride in our historic accomplishments in spurring the clean energy economy and making progress in solving the costly climate crisis. It is an important moment to review the headway we have made and look ahead to further action. Speaker Nancy Pelosi created our Select Committee at the start of the 116th Congress in 2019 and directed us to develop the policies and innovations needed to help solve the climate crisis. To a Member, she appointed climate champions from the Democratic Caucus that reflected the "know how" and commitment to tackling this enormous task. And we got right to work. We followed the science and bridged coalitions. We channeled the energy of climate protests into meaningful policy. We built a framework for action that charted a path to net zero. And we helped Congress turn hundreds of solutions into law.

From the outset, we've been intensely focused on helping families and businesses across America create good-paying local jobs, slash energy bills, bolster our domestic manufacturing, uplift disadvantaged communities, and position America to lead the

world in emerging clean economy. We're proud of our progress. But at the same time, we know that there's much more we must do. That is why we have devoted this hearing not just to evaluating what we've accomplished, but also to future action as we prepare a new and revised Climate Crisis Action Plan to spur further innovation.

Our work remains urgent. Climate disasters are putting America's security and stability at serious risk—threatening our economy, our way of life, and our communities. The crisis is no longer a distant threat. Higher costs, harsh impacts, and greater injury and loss of life are upon us now. This summer, brutal heat waves shattered more than 7,000 daily temperature records across the nation. Persistent drought is drying up our life-giving lakes and rivers, including the vital Colorado River and many of the lakes that support local economies across the West. Wildfires and massive floods are unleashing unprecedented levels of destruction. So are climate-fueled storms like Hurricane Ian, which recently joined the growing list of superstorms—like Katrina, Sandy, Harvey, Ida, and Maria—whose names have become synonymous with destruction.

Given the growing costs of these catastrophes, House Democrats have used the power of our majority to take bold action to solve the climate crisis. That includes progress we made through the Bipartisan Infrastructure Law, which makes communities more resilient to droughts, wildfires, storms, floods, heat waves, and other extreme weather events. And it includes our passage of the Inflation Reduction Act, which is the largest clean energy and climate investment in U.S. history, and which puts the United States on a path to reduce heat-trapping pollution by roughly 40% by 2030. Our Action Plan provided a roadmap to solve the climate crisis and Democrats used every opportunity in every piece of legislation over the past few years to lower costs through cleaner, cheaper energy and build safer, more resilient communities.

Solving the climate crisis is hard work, but the results already are encouraging—and the opportunities are exciting. Thanks to our work incentivizing clean technologies, companies in states like Kansas, Kentucky, North Carolina, and Alabama are racing to manufacture the batteries and technologies of the future, creating thousands of jobs along the way. Car manufacturers in states like Michigan and Ohio are investing in our workers as they build electric vehicles that will help reduce pollution. Utilities are increasingly adding cheap wind and solar into their energy mix, lowering costs for consumers and bolstering our energy independence. And we're deploying zero-emission school buses, clean postal trucks, and other clean investments that put families over polluters.

Our final majority staff report, which we will release next week, will look at these key victories and identify new opportunities to meet the goals of our Climate Crisis Action Plan. As the 117th Congress draws to a close, it will also serve as a reminder that the fight for climate action must continue—guided by science, rooted in justice, and powered by American workers. We have a moral obligation to our kids and future generations to continue our work. And I will add with great humility, it has been an honor and a privilege to lead such an impactful committee—with incredibly talented professional staff members led by Staff Director Ana Unruh Cohen. You all have truly made a difference, and I am grateful to you for answering the call to service to help solve the climate crisis and give our kids a fighting chance for a livable planet.

Mr. GRAVES. Thank you, Madam Chair. Thank you, Madam Chair. I appreciate the opportunity to join you today, and I have also enjoyed the opportunity to work with you over the past few years, and I share your sentiment that this relationship is not over and that we will continue to work on those issues and issue areas where we see eye to eye.

I also want to thank Ana and her team. I want to thank Sarah and her predecessors, Marty and Dave, and their team for all the work over the past few years. It has been absolutely extraordinary standing up a new committee with jurisdiction and pulling together all the expertise that has been pulled together.

Before I go on to my statement, I would just want to recognize Congressman McEachin. I served with him on this committee as well as on the House Natural Resources Committee. And while Congressman McEachin and I candidly didn't always see eye to

eye, I had a lot of respect for him, for the deep faith that he clearly has, and for the advocacy in issues that he felt so strongly about.

No question that it is a loss for this committee, it is a loss for this Congress, and certainly wishing the best for him and his family and his staff, and they are all in our prayers.

He was amazing in his strength and bravery and courage as he was dealing with, you know, tremendous adversity over the past year or so.

Madam Chair, you made a lot of mention of science and data, and I think it is really important that I bring up something that I brought up in many hearings, and that is a few jobs back, I was responsible for rebuilding the levees after Hurricane Katrina and rebuilding our coastal wetlands in Louisiana, which were devastated.

Nearly—some projections, nearly 200 square miles of coastal wetland loss as a result of the 2005 hurricanes that we had. And what we did a few years later is, we put together a master plan, and it wasn't the first master plan, but importantly, it was the first resource-constrained master plan.

And what I mean by that, is that all the master plans before said that we could take the coast of the Louisiana, and we could sustain effectively the footprint of 2000, the footprint of 1960, or whatever year.

The reality is, that was impossible. From a resource perspective, from a science, from a technology perspective, it was impossible.

So in 2012, we developed the first resource-constrained master plan. How much freshwater do we have in order to sustain the coastal wetlands and the coastal communities?

How much sediment to we have in order to rebuild our wetlands and our barrier islands, our dunes?

How much financial resources do we have? We can't go out there and go promise people we are going to have $1 trillion and go sustain the footprint of south Louisiana, whatever that number, is ridiculous.

And so we developed the first resource-constrained plan, and what it did is it actually moved the line further north. So we had folks that we had to tell, look, based on the resources we are aware of, we can't protect you.

We offered relocation assistance, we offered elevation assistance, but we had to tell them the truth, and it was that we cannot sustain the footprint based on current resources, current science, current technology.

Now, the reason I bring that up is because what is happening right now, under all of the various investments, whether it is the IRA, the ARA, the Infrastructure Bill, $610 billion being set aside—$610 billion—being set aside for what is called this energy transition.

The problem is, no one has done a resource-constrained plan. So we are all being told that we are going to achieve certain emissions reductions. We are all being told that we are going to adopt certain technologies whenever—it doesn't take a mathematician, it doesn't take a Ph.D., it takes somebody who can add and subtract.

The resources that we have available cannot—cannot—achieve the objectives that have been set.

Now, let's throw in some curve balls. Where is the next Ukraine invasion going to happen? Is it going to happen in the Congo where you have massive supplies of critical minerals where we suddenly lose access to that? Oh, but many say, well, then what we are going to do is, we are just going to produce domestically these resources.

Our current regulatory environment cannot—can't—facilitate the need or the demand for critical minerals that we have today and that are projected to be needed moving forward.

Madam Chair, I think it is critical, as we move forward, we recognize the fact that the United States has led the world in reducing emissions, that we build on the successes and learn from the failures, and that we ensure that all tools are on the table.

As I told President Macron just last week, if we had simply replaced Russian gas with U.S. gas in Europe for 1 year—for 1 year—218 million tons in emissions reduction.

So, Madam Chair, I look forward to working together with you, but I am going to say it one last time. More science, more data are needed to inform these plans if we are going to achieve—realistically achieve—targets. Otherwise, all we are doing is misleading the public, and are going to continue down a path of unaffordability, of undermining energy security, and of record inflation. I yield back.

Ms. CASTOR. I thank the Ranking Member.

Without objection, Members who wish to enter opening statements into the record have 5 business days to do so.

Statement for the Record of The Honorable Joe Neguse

Hearing on "Solving the Climate Crisis: Key Accomplishments, Additional Opportunities, and the Need for Continued Action"

December 6, 2022

I want to thank Chair Castor for her steadfast leadership as Chair of this Committee over the past 4 years. It has truly been a pleasure to serve with each of the members of this Committee.

I'd also like to take a second to acknowledge the passing of our friend and colleague, Congressman McEachin.

Congressman McEachin has been a tremendous champion for our climate and for all communities. We are thinking of his family, friends, and staff, and we will miss him dearly.

The Select Committee on the Climate Crisis has done incredible work over the last four years, and it has been a privilege to be part of it. Three hundred fourteen of the recommendations the SCCC made in our 2020 Majority Staff Report have since been signed into law, and we continue to make progress towards tackling the climate crisis with landmark legislation.

From the CHIPS and Science Act to the Inflation Reduction Act and more, the 117th Congress has made historic investments to combat climate change.

I am particularly proud of our work on disaster recovery and electric grid reliability—issues of great importance to my district in Colorado—and the investments we have made to improve the resilience of our nation's infrastructure.

I look forward to continuing to build on this progress as we work on an update to our 2020 Report and start the 118th Congress.

And now I would like to welcome our witnesses. Have a fantastic panel of witnesses today.

First, Alice Hill is the David M. Rubenstein Senior Fellow For Energy and the Environment at the Council on Foreign Relations. Her work at CFR focuses on the risks, consequences, and responses associated with climate change.

Judge Hill previously served as Special Assistant to President Barack Obama on the National Security Council staff, where she led the development of national policy to build resilience to catastrophic events, including climate change and biological threats.

Greg Wetstone is the President and CEO of the American Council on Renewable Energy, ACORE. It is a national nonprofit organization that unites finance, policy, and technology to accelerate the transition to a renewable energy economy.

And now I would like to recognize Congressman Crenshaw to introduce Dr. Foss.

Mr. CRENSHAW. Sorry. Kelly Armstrong was talking to me about a new sub stack or something. Thank you to all our witnesses for being here. I would like to personally introduce our witness, Dr. Michelle Michot Foss.

Dr. Michot Foss is a Fellow at the Baker Institute in my district at Rice University. She has spent 40 years in the energy industry, developing and directing research on energy, value chain economics, and commercial frameworks to support worldwide investment.

She is an expert by any definition, and we are very lucky to have her here today. Thank you, Dr. Foss, for joining us. Good to see you again.

Ms. CASTOR. Thank you, Mr. Crenshaw.

Next, Dana Johnson is the Senior Director of Strategy and Federal Policy at WE ACT for Environmental Justice. There Ms. Johnson leads the advocacy, regulatory, and policy-setting team, helping to shape clean air, healthy homes, water quality, energy democracy, and transportation standards policy.

Reverend Dr. Jessica Moerman is a climate and environmental scientist, pastor, educator, and advocate. She serves as the Vvice President of Science and Policy at the Evangelical Environmental Network.

Prior to joining EEN, Jessica was a AA—AAAS Science and Technology Fellow at the U.S. Department of Energy and has conducted climate research at various prestigious institutions, including her alma mater, Georgia Institute of Technology.

Brad Markell is the Executive Director of the AFL–CIO Industrial Union Council, IUC. The AFL–CIO is the National Labor Federation of the United States with 58 affiliated unions representing 12.5 million workers.

The IUC is the manufacturing arm of the AFL–CIO, with 12 unions representing over 1 million members directly in manufacturing.

Prior to joining the staff of AFL–CIO, Mr. Markell was an international representative with UAW, for 15 years, and a proud member of UAW Local 14 in Toledo, Ohio.

Without objection, the witnesses' written statements will be made part of the record. With that, Judge Hill, you are now recognized to give a 5-minute presentation of your testimony. Welcome.

STATEMENTS OF HON. ALICE HILL, DAVID M. RUBENSTEIN, SENIOR FELLOW FOR CLIMATE CHANGE POLICY, COUNCIL ON FOREIGN RELATIONS; GREG WETSTONE, PRESIDENT AND CEO, AMERICAN COUNCIL ON RENEWABLE ENERGY; DR. MICHELLE MICHOT FOSS, FELLOW IN ENERGY, MINERALS, AND MATERIALS, BAKER INSTITUTE FOR PUBLIC POLICY, RICE UNIVERSITY; DANA JOHNSON, SENIOR DIRECTOR OF STRATEGY AND FEDERAL POLICY, WE ACT FOR ENVIRONMENTAL JUSTICE; REV. DR. JESSICA MOERMAN, VICE PRESIDENT FOR SCIENCE AND POLICY, EVANGELICAL ENVIRONMENTAL NETWORK; AND BRAD MARKELL, EXECUTIVE DIRECTOR, AFL–CIO INDUSTRIAL UNION COUNCIL

STATEMENT OF HON. ALICE HILL

Ms. HILL. Thank you so much, Chair Castor and Ranking Member Graves. It is an honor to be here before you. I want to congratulate this committee on its extraordinary work.

You have brought much needed attention to the risks posed by climate change and identified powerful solutions. With the Jobs Act and the Inflation Reduction Act, Congress has made historic investments in both adaptation and mitigation.

Once considered a threat for the distant future, climate change has arrived. Americans need only look out their windows to confirm it. Bigger wildfires, heavier precipitation causing rain bombs, deeper droughts, greater temperature extremes and sea level rise have pummeled all 50 states and the territories.

Just yesterday, at the very edge of the Arctic Ocean in the northernmost community in Alaska, temperatures hit a historic high, 40 degrees, even in the dark of winter. That is 6 degrees higher than the previous record.

In late September, Hurricane Ian struck. Its rapid intensification as it approached Florida served as a wake-up call for how climate change can dramatically worsen extreme weather events. Estimates peg overall economic losses from that storm alone at $100 billion.

But Hurricane Ian isn't just the latest in a string of disasters this year alone. As of October 11th, NOAA estimates that there are 15 separate weather and climate disasters with losses exceeding $1 billion each, and they have battered the United States.

Those include a derecho that ripped across states in the Midwest, carrying wind gusts over 90 miles an hour, a storm in May that rained golf ball-sized hail in the Midwest, continuous drought in the western United States, and wildfires in New Mexico, and more.

Billion-dollar events are on the rise. 2022 marks the eighth straight year with at least $10-billion weather and climate disasters according to NOAA.

Climate-worsened disasters come not only at a high financial cost, they also take lives, undermine public health, and threaten national security. They inflict misery upon millions.

But the United States currently lacks a national strategy to adapt to climate-worsened extremes. The failure to create such a strategy makes us an outlier among developed nations. Without a national adaptation plan in place, our country risks leaving significant climate risks unmanaged.

To avoid repeated surprises by the severity and frequency of losses caused by climate-worsened weather, the nation should engage in national planning, including with state, local, territorial, and Tribal governments, as well as the private sector.

Core elements of any such plan and planning process should include an emphasis on environmental justice; a mechanism to prioritize Federal adaptation investments to make sure that the country is spending its limited resources effectively; promotion of cross-border regional and multi- hazard planning, because climate change honors none of the borders that we have so carefully crafted in the last centuries.

Because forest wetlands, marshes, and floodplains protect us, we need to focus on nature-based solutions, and we also must harmonize our climate and mitigation efforts going forward.

Similarly, we need, as part of our efforts in the United States, to develop, adopt, and enforce climate-resilient building codes, make better land-use choices, have greater consideration—and this is true for many of the States represented here—of the availability and affordability of property insurance as that market is affected, assistance for Americans displaced by climate extremes, and other very important elements.

Now is the time to act. We can no longer afford to wait to see what happens. It is up to each of us to move forward. We can't rest on our laurels. There is no time for climate action to slacken. Instead, we must quicken. Thank you so much.

[The statement of Ms. Hill follows:]

Prepared Statement by Alice C. Hill

David M. Rubenstein Senior Fellow for Energy and the Environment

Council on Foreign Relations

Before the Select Committee on the Climate Crisis

United States House of Representatives, Second Session, 117th Congress

Hearing on "Solving the Climate Crisis: Key Accomplishments, Additional Opportunities, and the Need for Continued Action"

December 6, 2022

Thank you, Chair Castor, Ranking Member Graves, and members of the committee for inviting me to testify before you today about current and future steps to combat climate change. My remarks will focus on actions the federal government could take to prepare for worsening climate impacts.

With the Infrastructure Investment and Jobs Act and the Inflation Reduction Act, Congress has made historic investments in both adaptation and mitigation. Those efforts deserve recognition. They put the nation on the path to reduce emissions by around 40 percent from 2005 levels in 2030 and include important investments in resilience. This Committee has also produced excellent recommendations for how the United States can better prepare itself moving forward. But more work remains to be done.

The United States needs to get smarter about risk reduction and resilience to prepare for worsening climate impacts in the face of rising temperatures. U.S. adaptation efforts have suffered from a lack of resources and attention. That needs to change. Climate-exacerbated extremes come at a huge financial cost. They also take lives, undermine public health, and threaten national security.

The Council on Foreign Relations takes no institutional positions on policy issues and has no affiliation with the U.S. government. All statements of fact and expressions of opinion contained herein are the sole responsibility of the author.

Damage from climate change is on the rise

Americans can look out their windows and know that climate change has arrived. Once considered a threat for the distant future, the impacts from rising temperatures have manifested across the country. Bigger wildfires, heavier precipitation causing "rain bombs," deeper droughts, greater temperature extremes, and sea-level rise have pummeled all fifty states and its territories.

In late September, Hurricane Ian struck. Its rapid intensification as it approached Florida served as a wake-up call for how climate change can dramatically worsen extreme weather events. The storm is expected to be the second costliest insured loss after Hurricane Katrina in 2005. Preliminary assessments estimate around $100 billion in overall economic losses, with only about $60 billion insured.

Hurricane Ian is just the latest in a string of disasters in 2022. As of October 11, 2022, according to the National Oceanic and Atmospheric Administration, fifteen separate weather and climate disasters with losses exceeding $1 billion have battered the United States this year. In addition to Hurricane Ian, Americans have suffered:

- Hurricane Fiona in September, which plunged much of Puerto Rico into darkness;
- a derecho in July, which ripped across fives states in the Midwest, turning the sky green and carrying wind gusts over 90 miles per hour;
- a storm in May that rained golf ball-sized hail across Minnesota, South Dakota, and Wisconsin;
- continuous drought in the western United States, causing water shortages; and
- wildfires in New Mexico, among others.

Billion-dollar loss events are on the rise. Every decade since 1980 has witnessed an increase in the number of billion-dollar disasters, with an annual average of approximately seven such catastrophes. In recent years, the number of events has grown significantly. 2022 marks the eighth straight year with at least ten billion-dollar weather and climate-related disasters. 2020 and 2021 broke records with twenty-two and twenty billion-dollar events respectively.

The frequency of these events matters. When disasters strike more often, communities, first responders, and households have less time to recover. According to the nonprofit Climate Central, the time between billion-dollar disasters has declined. In the 1980s, the average time between billion-dollar disasters was eighty-two days. By the 2010s, that number had dropped to twenty-six days. In 2020, the average declined to fourteen days.

More climate extremes are in America's future

The world is not on track to contain global average temperature rise to 1.5°C above preindustrial times, the aspirational goal to which virtually all nations agreed in the 2015 Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC). Although international efforts have bent the emissions curve downward, the curve has not bent sufficiently to contain warming to 1.5°C. To keep warming below this limit by 2100, the UN Intergovernmental Panel on Climate Change determined that human-caused greenhouse gas emissions should reduce 45 percent by 2030 with net-zero emissions achieved by 2050.

Just last month, nations gathered yet again for the UNFCCC Conference of the Parties—the twenty-seventh such conference. With the passage of the Infrastructure Investment and Jobs Act and the Inflation Reduction Act, the United States arrived to the negotiations with a strong commitment to reduce its contribution to greenhouse gas emissions. Even that commitment can't turn the tide.

The United Nations has calculated that the planet is on track to experience global average temperature rise between 2.1°C and 2.9°C. The United Nations Environment Programme has concluded that there is "no credible pathway to 1.5°C in place." Indeed, the World Meteorological Organization estimates there is a 50 percent chance that temperatures may temporarily reach 1.5°C in the next five years.

Exceeding the 1.5°C goal could lead to irreversible climate impacts, including the loss of some ecosystems. It would dramatically increase the risk of extreme weather events, with every tenth of degree of warming bringing ever-worsening impacts.

Catastrophic climate harm will not spare the United States. According to the latest draft of the congressionally-mandated Fifth National Climate Assessment, climate change threatens "the things Americans value most."

The nation should increase preparedness for climate extremes

To jumpstart preparedness, the nation should embark on seven essential actions:

1. **Create a national adaptation strategy.** The federal government should develop a national adaptation strategy and agenda, including an implementation plan to support it.

   The United States has become an outlier among developed nations in its failure to adopt a national strategy for adaptation. Canada just issued its final draft. New Zealand issued one earlier this year. The Netherlands has had a national adaptation plan since 2007, Russia since 2019. China revised its 2013 strategy this year, establishing a goal to become a climate-resilient nation by 2035. In the absence of a national plan, individual federal agency efforts risk failing to effectively reduce the nation's climate risk.

   The national adaptation strategy should aim to increase climate risk planning among state, local, and tribal governments as well as the private sector. Core elements should include:

   - **Prioritization of environmental justice considerations.** The national adaptation strategy should drive closure of the environmental justice gap. It should identify ways federal programming can alleviate the disproportionate impact climate-fueled disasters have on disadvantaged communities, people with disabilities, older people, and children.
   - **Identification of a mechanism to prioritize investments.** The national adaptation strategy should identify a mechanism for the federal government to make choices on how to allocate limited resources. Without a system to prioritize investments, agencies may spread monies across many smaller projects rather than making the necessary investments in more impactful lasting endeavors. As the Government Accountability Office (GAO) has noted, significant climate risks may go unmanaged because "climate change cuts across agency missions and presents fiscal exposures larger than any one agency can manage."
   - **Promotion of cross-border, regional, and multi-hazard planning.** The national adaptation strategy should promote risk-reduction programs that involve regional protection across multiple communities and multiple hazards. Climate change honors no borders. That makes regional and cross-border planning essential. Communities should also prepare for multiple hazards like drought accompanied by extreme heat and wildfire.
   - **Promotion of nature-based solutions.** The national adaptation strategy should promote efforts to restore, augment, and deploy natural infrastructure. Forests, wetlands, marshes, and floodplains help communities manage their flood risks. They also act as a sink that absorbs carbon dioxide emissions while providing natural spaces for human enjoyment. The acceleration of climate change threatens these areas. The federal government's encouragement could help communities make investments now that will yield protection in the future.
   - **Consideration of sudden climatic changes.** The national adaptation strategy should include consideration of sudden climatic changes. For example, scientists have recently warned that a sudden collapse of the Thwaites Glacier in West Antarctica could raise global sea levels by two feet.
   - **Focus on reducing power outages.** The national adaptation strategy should promote planning to ensure the reliability of the electric grid. Climate-worsened extremes have increased power outages across the nation. When power fails, it causes cascading failures in other critical infrastructure—transportation, water management, communications, and health care, among others.
   - **Harmonization of climate adaptation and mitigation efforts.** The national adaptation strategy should promote consideration of how adaptation and mitigation efforts may intersect. For example, investment in clean energy solutions may cause unintended consequences. Construction of an energy-efficient building may contribute to emissions-reduction efforts. However, if the building burns in a climate-worsened wildfire, more emissions will result from the new construction to replace the building. Similarly, increased deployment of solar power reduces emissions, but wildfire smoke can dramatically reduce the effectiveness of solar panels. In California, wildfire smoke cut solar power production during peak hours by 10 to 30 percent in 2020. If people turn to diesel-generated power to make up for the lost energy, emissions can increase, thus undermining mitigation efforts.

- **Adjustment of cost-benefit analysis for federally-supported projects.** The national adaptation strategy should encourage the adjustment of cost-benefit analysis of federal investments to reflect the future benefits of resilience. Existing cost-benefit analysis may not accurately account for the benefits of resilience measures that will protect against climate impacts in the future. It also may tend to favor investments based solely on economic return rather than benefits to people and thus favor richer communities. Adjustment of the analysis could result in longer-term protection for more people.

To drive implementation of the strategy, the federal government should:

- **Establish a set of climate scenarios to guide planning.** The federal government should develop climate change scenarios for use across the government and in planning with state, local, territorial, and tribal governments as well as the private sector. Use of common planning scenarios will help increase awareness and understanding of the risks and the range of possible mitigation solutions.
- **Develop replicable planning exercises.** The federal government should develop scenario-based planning exercises, including table-top exercises to help the federal government, communities, and regions understand and plan for their climate risks. To the extent possible, these exercises should include advanced model projections that reflect downscaled impacts. During the Obama administration, the Federal Emergency Management Administration's (FEMA) exercise division developed a pilot project that offered exercises based on scenarios to several communities to assist their planning efforts. Norfolk, Virginia, credits the pilot project with contributing to its robust climate planning efforts.
- **Conduct regular national climate risk exercises.** To test the strategy as well as national preparedness, the federal government should regularly conduct national-level exercises focused on climate risks. These exercises would serve as educational tools, base-line setting mechanisms, avenues for identifying and closing gaps, and opportunities to build relationships.
- **Focus on workforce development.** The federal government should identify ways to increase understanding of climate risks and require consideration of climate risks in training, operations, and planning within agencies, including within the military and intelligence agencies. Without a well-informed workforce, the threats from climate change may go unrecognized or unappreciated.

2. **Provide technical assistance to address climate risk.** The federal government should provide reliable climate risk information in an ongoing, user-friendly format. Although the federal government generates enormous amounts of data and information concerning climate change, it still lacks adequate guidance, decision-making tools, and other resources to assist decision-makers at the scale necessary to foster widespread resilience planning. As the GAO recently noted, "federal, state, local, and private sector decision-makers may be unaware that climate information exists or may be unable to use what is available."

   In providing technical assistance regarding climate risk, the federal government should:

   - **Create robust community-level and parcel-level risk mapping.** The federal government should provide—as a public good—risk information on a sustained basis. Communication of climate risk is essential for planning efforts. Although the Biden administration has renewed efforts to provide risk information, the federal government should provide up-to-date information on hazard risks, including those from climate change. Right now, that information is difficult to access. Some communities resort to hiring outside consultants for expertise. Private philanthropy has also sought to fill information gaps. The current patchwork approach risks leaving communities and households behind.
   - **Designate a lead agency as the point of contact to assist communities in planning for climate risk.** The federal government should designate one agency as the coordinating agency and create a one-stop access point for obtaining federal assistance. Federal agencies have established numerous programs to assist communities in preparing for climate change. They have not, however, made it easy for communities to understand what is available and how to access it. Because no single entity coordinates fed-

eral efforts, community leaders have to contact multiple agencies and comply with multiple—sometimes conflicting—application requirements.

- **Develop a cadre of climate risk advisors.** The federal government should recruit and train climate risk advisors to provide expert climate risk advice to support state, local, territorial, and tribal governments in their planning as well as to assist private sector owners and operators of critical infrastructure to prepare for escalating threats.

3. **Promote development of climate-resilient building codes.** The federal government should work with model building code organizations to inform development of model building codes that account for future climate risk. Creation and adoption of such standards for climate-worsened hazards could lead to substantial savings for the federal government in damage averted and lives saved.

   Research from the National Institute of Building Sciences has determined that every $1 spent complying with disaster-resistant building codes can avert $11 in damages. FEMA estimates that adding features to protect against natural disasters adds little to the cost of construction—an average of 1 to 2 percent of the total building cost. Despite the risk-reduction benefits of stronger building codes, 65 percent of cities and towns have failed to adopt modern disaster-resistant codes. Moreover, even if these jurisdictions have adopted the most recent model codes, the codes likely do not reflect the future risks from climate change.

4. **Promote better land-use choices**. The federal government should conduct an analysis to determine how it can improve local land-use decisions through incentives or withdrawal of federal investment. For example, the federal government could condition grant funding on demonstration of more ambitious efforts to reduce development in areas vulnerable to climate impacts.

   One of the hardest issues facing the nation with regard to climate impacts is that some land may become uninhabitable as a result of rising temperatures. To the extent the federal government provides support for new development in at-risk areas, it may inadvertently expose people and property to greater harm.

   The federal government should also end its practice of underwriting new development in at-risk areas. Congress has already acted, albeit in a limited way, to restrict federal subsidies for development in risky areas. In the 1970s and 1980s, Congress realized that federal support of development on high-risk coastal barriers did not make economic sense. The Coastal Barrier Resources Act of 1982 (CBRA) makes certain areas ineligible for federal investments and financial assistance that would encourage development in designated areas. This means that those who want to live and invest in those areas bear the full cost of development and rebuilding after a disaster.

5. **Prepare for possible changes to property insurance availability and affordability.** The federal government should increase its efforts to identify ways to ensure the continued availability and affordability of private insurance. As a result of increased wildfire activity in California and increased storm frequency in Florida, Texas, and Louisiana, homeowners have already seen dramatic rises in premium rates as well as shrinkage in private property insurance availability. If private insurers choose to exit the property insurance market, the federal government may find itself the insurer of last resort.

6. **Improve emergency preparedness for concurrent and consecutive disasters.** The federal government should amplify efforts to assist critical infrastructure owners and operators with understanding their climate risk and what they can do to reduce that risk. With climate change, disasters may occur in several locations concurrently or close in time.

   The nation should plan for and acquire the capabilities to respond to simultaneous disasters by creating greater redundancy, increasing stock-piling, and enhancing mutual aid agreements. The federal government should also conduct research on the efficacy of early warning systems and promote nationwide best practices to achieve an easy-to-understand uniform system. Modelling of failure points for interconnected infrastructure could inform climate scenarios and exercises offered by the federal government.

7. **Improve planning for security and migration risks driven by climate change.** The federal government should increase planning for the security

risks posed by climate change. Although the nation's key strategic security documents acknowledge the risks posed by climate change, robust planning for those risks has not followed. Critical components of this work include:

- **Preparing for changes in the Arctic.** The federal government should accelerate adaptation efforts in the Arctic. Among other challenges, ecotourism, damage to infrastructure from melting permafrost and sea-level rise, resource competition, and the escalation of global security tensions within the region will place far greater demands on federal resources.
- **Planning for climate-driven displacement and migration.** The federal government should develop strategies to assist both those that will be on the move and the communities that will receive them. Every year, climate-worsened events, like the flooding that resulted from extreme precipitation in Houston in 2017 or the wildfires in California that same year, displace Americans from their homes. Increased migration, both within the United States and globally, will affect homeland security. Screening for and reducing climate risk should be essential in international development work.

Thank you for the opportunity to speak with you today. I look forward to answering any questions you may have.

Ms. CASTOR. Thank you, Judge Hill.

Next, Mr. Wetstone, you are recognized for 5 minutes to present your testimony. Welcome.

STATEMENT OF GREGORY WETSTONE

Mr. WETSTONE. Thank you, Chair Castor. Try that again. Thank you, Chair Castor, Ranking Member Graves, and distinguished members of the Select Committee for the opportunity to testify.

My name is Greg Wetstone. I am President and CEO of the American Council on Renewable Energy. I want to take a moment at the outset to convey my deep condolences on the untimely loss of Congressman McEachin. His commitment to the cause of environmental justice is a legacy that we are committed to carrying forward at ACORE.

ACORE is the nation's first pan-renewable nonprofit. Working across technologies, our member companies include leading developers, manufacturers, investors, utilities, and corporate offtakers.

Last year, our members were responsible for more than 90 percent of the booming growth in utility-scale, U.S. renewable power.

We are all about our mission at ACORE, and that is to unite finance, policy, and technology to accelerate the transition to a renewable energy economy.

I want to extend ACORE's deep appreciation of the committee for the critical role it has played in defining the nation's climate agenda. In particular, the Select Committee's majority staff report, "Solving the Climate Crisis," has provided a roadmap for this Congress.

An impressive 305 of the report's recommendations are now enacted into law, a clear testament to the sagacity and lasting impact of the select committee's work.

Further proof of the committee's influence can be seen in a recently enacted Bipartisan Infrastructure Law and the Inflation Reduction Act, which have enabled historic progress towards our climate objectives.

The Infrastructure Law promotes vital upgrades to the nation's antiquated electric grid. But the biggest gains were in the IRA, which finally positioned the country to get on a climate-safe path.

Thanks to the IRA, clean energy businesses will benefit from stable, long-term tax incentives, like those enjoyed in the fossil fuel sector for more than a century.

Analysts predict that, taken together, the IRA's programs will reduce greenhouse emissions in the U.S. by roughly 40 percent, below 2005 levels.

With this committee's help, Congress has provided a welcome moment of hope in the face of a climate crisis, which, as we just heard, is accelerating faster than predicted, and for that, we are grateful.

But how can we ensure that these projections actually come to fruition, and how do we build on this progress to ensure a more climate friendly future?

ACORE has identified several areas for continued oversight and eventual legislation or regulatory action that I will outline briefly here, and I urge the committee to note the greater detail in my written testimony.

A critical first step, of course, begins with prompt completion of guidance from the Treasury Department under the IRA. ACORE is pleased to see Treasury soliciting input from diverse stakeholders, and we are encouraged by the guidance we have seen today.

The next challenge I would mention is the effort to catalyze more domestic renewable energy manufacturing and the related effort to accommodate trade policies, so the reality that we have no choice but to rely on the global supply chain until we build out our domestic manufacturing base in the renewable sector.

I have more detail in my written testimony, but I would mention here that last week's Commerce decision on solar tariffs will further constrain solar panel supply, and it is not helpful.

The next challenge is a big one. Building the 21st century grid, we need to accommodate the clean energy transition and ensure resilience of the nation's electric supply.

There is a dire need to expand and update our outdated and Balkanized transmission infrastructure. This is a complex area. My written testimony described several key elements here, and I do want to highlight that there are three bills introduced by members of this committee that are relevant—Chair Castor's Efficient Grid Interconnection Act, her Enhancing Electric Resilience Act, and Representative Casten's Reinforcing the Grid Against Extreme Weather Act. Those are important parts of the challenge there.

Regarding another important legislative area, ACORE respectfully urges Congress to swiftly pass bipartisan siting and permitting reform with a prominent transmission component.

Finally, I want to mention the importance of regulatory action to an effective climate solution. Achieving the emissions reduction targets necessary to meet the climate challenge will eventually require steps beyond the IRA's programs.

It is my strong belief we will ultimately need regulatory action on climate and the Clean Air Act provides ample authority in a manner fully consistent with the Supreme Court's recent decision in West Virginia v. EPA.

That concludes my oral summary. We face daunting challenges, but prospects for a successful, clean energy transition have dramatically improved as a result of your important work. You have

given us hope, and for that, we are immensely grateful. I look forward to your questions.

[The statement of Mr. Wetstone follows:]

Written Testimony of Gregory Wetstone

President and CEO

American Council on Renewable Energy (ACORE)

Before the U.S. House of Representatives

Select Committee on the Climate Crisis

Hearing on "Solving the Climate Crisis: Key Accomplishments, Additional Opportunities, and the Need for Continued Action"

December 6, 2022

Good afternoon, Chair Castor, Ranking Member Graves, and distinguished members of the Select Committee. Thank you for the opportunity to provide testimony at this important hearing and for your dedication and leadership in charting a path forward on climate change and promoting America's renewable energy future. My name is Greg Wetstone, and I am President and Chief Executive Officer of the American Council on Renewable Energy (ACORE).

Before I proceed further, I want to take a moment to convey my sympathies on the untimely loss of Congressman Donald McEachin. His inspiring commitment to the cause of Environmental Justice as a member of the Select Committee and throughout his time in public service is a special legacy and one we are committed to carrying forward at ACORE. I speak on behalf of the entire ACORE organization in extending our deepest condolences to his family, friends, staff, and colleagues.

ACORE is the nation's first pan-renewable nonprofit organization. With member companies that include the nation's leading renewable energy developers, manufacturers, investors, electric utilities, and corporate off-takers, our mission is to unite finance, policy, and technology to accelerate the transition to a renewable energy economy. ACORE member companies hold more than $25 trillion in assets, and last year more than 90 percent of the booming growth in utility-scale U.S. renewable power was financed, developed, owned or contracted by ACORE members. As we celebrate our 20th anniversary this year, we are proud of the extraordinary clean energy growth we have witnessed over that time. Today, America's renewable energy sector is a national economic driver, with more than $50 billion in new investment annually.

Key Achievements in Addressing the Climate Crisis

On behalf of ACORE, I want to extend our heartfelt appreciation to the Committee for the critical role it has played in redefining the nation's climate agenda. In particular, the Select Committee's Majority Staff Report, *Solving the Climate Crisis*, has provided an influential roadmap for legislative efforts in this Congress. Since the report's publication in June 2020, an astonishing 305 of its recommendations have been enacted into law, a testament to the sagacity and lasting impact of the Select Committee's work.

Thanks in no small part to the influence of this Committee, the recently enacted Infrastructure Investment and Jobs Act (IIJA) and Inflation Reduction Act (IRA) will enable historic progress toward the achievement of crucially important climate objectives.

The bipartisan Infrastructure and Investment Jobs Act promotes vital upgrades to the nation's antiquated electric transmission network, an essential step if we are to achieve the reliability, cost savings, and lower pollution benefits of a 21st century grid that more efficiently taps the nation's immense renewable energy resources. The law provides substantial funding to plan for and develop new large-scale transmission assets alongside measures to improve the performance of existing capacity through advanced reconductoring, dynamic line rating, and other innovative grid enhancements. The law also clarifies FERC's important backstop siting authority, which can be used to construct key interstate transmission lines.

But the biggest gains by far were in the IRA enacted last August, which finally positioned the country to achieve its climate targets. Thanks to the IRA, clean energy businesses will benefit from stable, long-term tax incentives like those enjoyed by the fossil fuel sector for more than a century. Tax credits for renewable genera-

tion are complemented by new incentives for energy storage, clean hydrogen and domestic clean energy manufacturing.

Consistent with the Committee's recommendations to upgrade our transmission infrastructure, there are also multiple important programs established under the IRA and the IIJA to promote an upgrade of our grid, including a multi-faceted initiative under the DOE's new Grid Deployment Office (GDO), which has substantial new funding to support critical transmission development through loans, capacity contracts, and public-private partnerships. This includes $2.5 billion for a Transmission Facilitation Program (TRP) established by IIJA to help transmission developers overcome financial hurdles for projects with far-reaching benefits for American energy consumers. Three other GDO grant programs, totaling $10.5 billion, focus on grid modernization and resilience. Known collectively as "GRIP," these federal financing tools are a critical step to further upgrade the transmission and distribution system to improve the resilience and reliability of the grid. The IIJA also funds important transmission planning studies and assists states with necessary planning and wholesale market expansion. Notably, the IRA provides $2 billion to cover the direct costs of loans for construction and modification of transmission deemed in the national interest, $760 million in grants for permitting and siting and for economic development in communities with transmission builds, and $100 million for modeling and analysis. ACORE was pleased to see the IRA also expand DOE's loan authority, including through the new Section 1706 Energy Infrastructure Reinvestment Financing program, as well as other programs.

Promoting A Just Transition

At ACORE, we are committed to doing all we can to help bring the benefits of the clean energy transition to disadvantaged communities. In that regard, we are pleased to note that the IRA promotes a Just Transition with provisions that grant bonus incentives to renewable projects undertaken in low-income and tribal communities or as part of a recognized affordable housing program. We believe these provisions provide meaningful economic benefits while helping to reduce energy cost burdens on low- and moderate-income Americans. In these areas, energy costs are often more than three times the national average.[1] The IRA will also help to stimulate community-led renewable energy projects with nearly $3 billion in block grants and $27 billion in funds via the new Greenhouse Gas Reduction Fund, with $15 billion earmarked for low-income and disadvantaged communities.

Another crucial element of a just energy transition involves assisting communities dependent on fossil fuels for jobs and revenue. Reflecting a recommendation from the Select Committee's Majority Staff Report, the IRA provides bonus credits for renewable projects located in such "energy communities" in an effort to help avoid an economic downturn following the closure of coal facilities while also giving local workers the chance to shift to the clean energy sector where worker demand is high.

We look forward to working with Congress and the Biden administration to ensure that these important programs are fully funded and faithfully implemented. In that regard, ACORE urges that the federal government prioritize meaningful upfront engagement with affected stakeholders while ensuring that at least 40% of the overall benefits from its investments flow to disadvantaged communities, as called for in the Justice40 Initiative.

Greenhouse Gas Emission Impacts

Analysts predict that taken together, the IRA's programs will reduce greenhouse gas emissions in the U.S. by roughly 40 percent below 2005 levels by 2030.[2] We are incredibly fortunate the economics of renewable energy technologies have improved so dramatically over the past decade that the clean energy tax incentives in the IRA can alone yield so much progress toward a sustainable climate. We project that investments in renewable generation and enabling technologies will accelerate from the current $50–$60 billion annually to $90–$100 billion annually, which is more in line with our national climate goals.

Congress, and this Committee in particular, has provided a welcome moment of hope in the face of a climate crisis that is accelerating faster than predicted. For that, we cannot thank you enough.

---

[1] Drehobl, A., Ross, L., & Ayala, R. "How High Are Household Energy Burdens? An Assessment of National and Metropolitan Energy Burden across the United States." ACEEE. (September 2020).

[2] King, B., Larsen J., & Kolus, H. A Congressional Climate Breakthrough. Rhodium Group. (July 2022). *Also see* Mahajan, M. et al. Modeling the Inflation Reduction Act Using the Energy Policy Simulator. Energy Innovation. (August 2022).

Critical Next Steps

But how can we ensure these projections come to fruition? And how do we build on this progress to ensure a more climate-friendly future? As described below, ACORE has identified five key areas for continued congressional oversight and action.

1. *IRA Implementation*:

The most important climate law in history must be quickly and effectively implemented. A critical first step is the prompt completion of guidance from the Treasury Department fleshing out crucial program details that will inform how investors and developers' structure renewable energy transactions. ACORE is pleased to see Treasury soliciting input from a diverse group of stakeholders and encouraged by the guidance issued to date. We urge agencies across the federal government to take a similar approach as they work to get the most out of key IRA programs.

2. *Catalyzing American Renewable Energy Manufacturing and Maintaining the Global Supply Chain*:

Building out the Domestic Supply Chain. Renewable energy manufacturing presents a once-in-a-century opportunity to recruit and train the next generation American workforce. The IRA establishes a suite of clean energy tax credits to incentivize the production of numerous renewable technologies, with additional incentives for projects using domestically sourced materials. Importantly, full-value credits are reserved for employers who meet prevailing wage and apprenticeship requirements, ensuring that jobs in the clean energy workforce are good-paying and available to all.

One of those credits is devoted to the manufacture of advanced energy technologies, such as solar photovoltaic wafers, cells, and modules; inverters; wind energy components; and battery cells and modules, which today are largely produced overseas. Another provision provides a tax credit for building or refurbishing the requisite factories and production facilities for clean energy and energy efficiency technologies. ACORE also supports the use of the Defense Production Act (DPA) for a number of clean energy technologies and grid components, as announced by President Biden in June, and urges Congress to appropriate sufficient funds for DOE's use of the DPA. As renewable energy demand is driven to extraordinary heights, onshoring the lifecycle supply chain is crucial to lowering costs and maximizing American competitiveness.

We look forward to the development of an enhanced domestic renewable energy manufacturing base. But that will not happen overnight. Like most sectors of the American economy, the renewable industry has a global supply chain and a business model that relies on stable policies and predictable pricing.

Rational Trade Policies that Protect the Global Supply Chain. Trade policies that constrain the availability of key renewable energy products, like the Commerce Department's preliminary determination on the circumvention of existing solar tariffs that was announced last week,[3] threaten to undermine Biden administration efforts to address climate change and accelerate the clean energy transition. A new certification process was created as part of Commerce's recent action, and there is serious concern that it creates new red tape and bureaucracy that will continue to slow solar development, even during the moratorium on new tariffs announced by the President in June of this year. ACORE respectfully urges that Congress call for a negative final determination by the Commerce Department. Its destructive anti-circumvention solar inquiry has already resulted in significant delays, cancellations, and layoffs in the U.S. solar industry.[4] Prior to the initiation of this inquiry, solar deployment was previously forecasted to reach record levels in 2022 but has instead shown signs of steady decline.[5]

It is no small matter that we have seen a dramatic shift from "free trade" policies to protectionism from both parties over the past few years. The renewable energy sector and the effort to protect our climate have, unfortunately, been caught in the middle.

---

[3] U.S. Department of Commerce Office of Public Affairs. Department of Commerce Issues Preliminary Determination of Circumvention Inquiries of Solar Cells and Modules Produced in China. (December 2022).

[4] Davis, M., et al. U.S. Solar Market Insight Q3 2022. U.S. Solar Market Insight Q3 2022. Wood Mackenzie Power & Renewables and Solar Energy Industries Association (SEIA). (September 2022).

[5] *Id.*

3. *Building a 21st Century Grid*:

There is a dire need to expand and upgrade the nation's outdated and balkanized transmission infrastructure to realize the IRA's potential and address serious concerns about the reliability of our electricity supply, especially given the challenges posed by increasingly frequent extreme weather events. The existing electric transmission system in America took more than a century to build, and evidence of its old age is glaring. We need a "Macro Grid" with new high-voltage transmission lines that better connect America's rich renewable resource areas to the population centers with the greatest electricity demand. According to studies from Princeton,[6] MIT,[7] and the National Renewable Energy Laboratory,[8] meeting U.S. climate goals will require more than doubling the current U.S. transmission capacity. Further, a recent Princeton study found that we need to more than double the pace of historical transmission build to realize the full emission reduction benefits of the IRA.[9]

A Tax Credit for High-Voltage Transmission. Left out of the IRA was an investment tax credit (ITC) for high-voltage transmission, which is needed to spur critical investment in interstate lines. A transmission ITC would provide developers with the long-term investment certainty they need while bringing down utility bills for ratepayers and lowering the upfront costs of construction that are too often undervalued relative to the reliability and economic benefits. Further, a transmission ITC would provide immediate financial benefits to 22 "shovel-ready" transmission projects that are anticipated to be built in the coming years.[10] A 2021 analysis of the policy by ACORE and Grid Strategies found a 30 percent transmission ITC would create over 650,000 good-paying jobs, add 30,000 megawatts of renewable energy capacity to the grid, deploy more than $15 billion in private capital investment, and provide $2.3 billion in energy cost savings for the lower 80% of income brackets.[11]

Congressional Support and Direction to the Federal Energy Regulatory Commission. Other key issues are in the purview of the Federal Energy Regulatory Commission (FERC), which has embarked on important efforts to improve how we plan and pay for regional transmission lines and streamline the process for interconnection of new renewable generation. As described below, ACORE respectfully urges Congress to support these reforms and provide direction in the following areas:

- **Interconnection Queue Reform.** Among the chief issues requiring a final FERC rulemaking is the needlessly lengthy interconnection process for new renewable generation resources. As I speak to you today, more than 1,300 gigawatts (GW) of wind, solar, and energy storage projects are stuck in regional queues due to costly, slow, and unpredictable policies that govern the interconnection processes. The 900 GW of wind and solar power in those queues could power more than 200 million American homes, while the 400 GW of trapped battery storage would enhance grid reliability and help us grapple with the threat of electricity blackouts in certain regions.

  The recent approval of reforms proposed by the PJM Interconnection is a promising start, but we would benefit from a larger-scale congressional effort to expedite FERC's proposed rulemaking and streamline the interconnection process nationwide. Such a step could further our clean energy goals simply by tapping projects that are already waiting for a chance to deliver clean and affordable electricity. A joint report by the Macro Grid Initiative (MGI) and Americans for a Clean Energy Grid found that today's unworkable interconnection process results in higher costs for consumers, delayed rural economic development, and diminished job creation.[12]

- **Participant Funding Reform.** Closely related to the need for interconnection process improvements is the challenge of participant funding. Currently, renewable developers looking to access the grid are saddled with disproportionate expenses for costly transmission upgrades that have widespread regional benefits.

---

[6] https://netzeroamerica.princeton.edu/the-report

[7] https://www.sciencedirect.com/science/article/pii/S2542435120305572

[8] https://www.nrel.gov/news/program/2022/exploring-the-big-challenge-ahead-insights-on-the-path-to-a-net-zero-power-sector-by-2035.html

[9] https://repeatproject.org/docs/REPEAT_IRA_Transmission_2022-09-22.pdf

[10] https://acore.org/transmission-projects-ready-to-go-report/

[11] https://acore.org/investment-tax-credit-for-regionally-significant-transmission-lines/

[12] Caspary, J., Goggin, M., Gramlich., R., & Schneider, J. *Disconnected: The Need for a New Generator Interconnection Policy.* Americans for a Clean Energy Grid and Macro Grid Initiative. (January 2021).

To overcome this hurdle, Congress should waste no time in enacting Chair Castor's "Efficient Grid Interconnection Act," which directs FERC to reasonably divide the cost of network upgrades among the beneficiaries of associated projects. The current, unworkable approach is analogous to requiring the next car entering a crowded highway to pay the entire bill for a needed lane expansion.[13]

- **Cost Allocation for New Interregional Lines.** There is broad consensus on the need for new high-voltage, interregional lines, but the question of who pays for these new lines has been a key barrier to their construction. As a recent report explains, long-range transmission planning processes used by regional planners often grossly undercount the benefits of interregional lines.[14] A much better model is provided by the stakeholder-informed process used by the Midcontinent Independent System Operator (MISO) in their Long Range Transmission Plan (LRTP) process, which considers benefits more broadly and is expected to result in a cleaner, lower-cost electric grid. ACORE, therefore, urges Congress to enact Chair Castor's recently introduced "Enhancing Electric Grid Resilience Act," which assigns the costs of nationally significant transmission lines according to a rough outline of their widespread benefits, consistent with the "beneficiary pays" principle. We also encourage the Commission to finalize its rulemaking on regional planning and cost allocation as soon as possible.
- **A Minimum Interregional Transfer Requirement.** ACORE is supportive of efforts to direct FERC to issue a rulemaking to establish a minimum interregional transfer requirement. Such a directive would secure a more cost-effective power supply through a grid better able to move power between regions as needed to keep the lights on. Representative Casten's "Reinforcing the Grid Against Extreme Weather Act" requires FERC to establish minimum transfer capability requirements between regions, which would reduce outages and lower energy costs for homes and businesses.[15] A minimum transfer requirement could also be lifesaving. In fact, an ACORE and Grid Strategies report last year found that an additional GW of interregional capacity between the ERCOT region and the western United States could have avoided the worst impacts of Winter Storm Uri, which claimed hundreds of lives in Texas.[16]
- **Promoting Stability in FERC Leadership.** We are disheartened by recent reports suggesting that we may not see the reconfirmation of FERC Chairman Richard Glick before his term ends at the conclusion of this year. Chairman Glick's track record of bipartisan leadership and proven competence is a major asset to FERC as it addresses the array of pressing major grid challenges that we face as a nation. Failure to reinstate Chairman Glick before his term expires on December 31 creates the risk of an impasse on key decisions and the possibility of a split panel on important topics. ACORE respectfully urges this Committee, the Biden administration and the U.S. Senate to take every reasonable step to avoid this outcome.
- **Siting and Permitting Reform.** ACORE encourages Congress to swiftly pass bipartisan siting and permitting reform with a prominent transmission component. Currently, the average transmission project takes well over a decade from announcement to completion, a staggering length of time that is nowhere close to the speed at which transmission must be built if we have any hope of meeting our climate targets. It is not an accident that virtually no interregional transmission lines have been built in the last decade, despite their critical importance to grid reliability in the face of such disasters as Winter Storm Uri.

  As part of this effort, ACORE supports enhanced FERC authority over the siting and permitting of nationally significant interregional transmission lines that exceed a certain megawatt threshold, which would preserve state jurisdic-

---

[13] Sankaran, V., Parmar, H., & Collison, K. Just & Reasonable? Transmission Upgrades Charged to Interconnecting Generators Are Delivering System-Wide Benefits. ICF Resources, LLC and American Council on Renewable Energy. (September 2021).

[14] Gramlich, R. Enabling Low-Cost Clean Energy and Reliable Service Through Better Transmission Benefits Analysis. A Case Study of MISO's Long Range Transmission Planning. American Council on Renewable Energy, Macro Grid Initiative, and Grid Strategies, LLC. (August 2022).

[15] https://www.nrdc.org/sites/default/files/ge-nrdc-interregional-transmission-study-report-20221017.pdf

[16] Goggin, M. Transmission Makes the Power System Resilient to Extreme Weather. Grid Strategies and American Council on Renewable Energy. (July 2021).

tion over the vast majority of transmission projects.[17] As mentioned above, Congress should also adopt language to allocate the costs of these lines according to their benefits, as contemplated by Senator Manchin's permitting reform legislation. Prompt enactment of permitting reform would rapidly accelerate nationwide transmission deployment.

4. *SEC Climate Disclosure Requirements*:

We are looking to the private sector to finance the clean energy transition at the heart of our climate response, and in that regard, I want to note that ACORE supports the SEC's objectives to help investors access consistent, transparent, and forward-looking climate-related information so they have appropriate knowledge of climate risks, greenhouse gas emissions, and climate solutions. Through information on how companies are using, investing or generating renewable energy, climate disclosure requirements can reflect the important role the private sector plays in advancing the energy transition. We urge support for the proposed SEC action that would require companies to disclose climate-related financial information. In particular, ACORE urges the SEC to include direct investments in renewable energy projects in its definition of climate opportunities—calling attention to the importance of renewable energy finance in companies' climate plans.

5. *A Regulatory Pathway*:

Studies show that achieving the long-term emission reduction targets necessary to meet the climate challenge will require additional steps beyond the pivotal gains we will see from IRA programs and incentives.[18] Historically, the U.S. has addressed environmental concerns by deploying varying regulatory approaches. For example, we effectively responded to the acid rain problem with a cap on emissions coupled with market-based trading. Urban air quality has improved dramatically as a result of both health-based air quality standards and technology-based standards for motor vehicles and stationary sources. We directly addressed stratospheric ozone depletion with a mandatory phase-out of chlorofluorocarbons and other ozone-damaging compounds, demonstrating our ability to act with other nations to solve global threats.

Eventually, we will need to look to the Clean Air Act, which provided authority for these programs and many others, and deploy some version of these regimes, or perhaps a carbon emission fee, to ensure the reductions necessary to complete the transition to a climate-safe economy. It is my strong belief that the Clean Air Act provides ample authority for such regulatory action in a manner fully consistent with the Supreme Court's decision in West Virginia v EPA,[19] and ACORE looks forward to working with the Biden administration toward such an initiative.

Conclusion

Thank you again, Chair Castor and members of the Committee, for the opportunity to testify today and for your leadership and commitment toward an effective response to the climate crisis. We face daunting challenges, but prospects for a successful and just clean energy transition have dramatically improved as a result of your important work. You have given us hope, and for that we are immensely grateful. I look forward to your questions.

Ms. CASTOR. Thank you very much.

Next, Dr. Foss, you are recognized for 5 minutes. Good afternoon.

STATEMENT OF DR. MICHELLE MICHOT FOSS

Dr. FOSS. Good afternoon. Thank you, Chair Castor, Ranking Member Graves, Congressmembers of the committee, and a special thanks to Congressman Crenshaw for the very nice introduction. I appreciate that.

I think we all agree that we all want to do the right things. I always start that way in hearings in which I am asked to testify.

---

[17] Reed, L. & Eberhard, K. What to keep and what to fix in Manchin's permitting proposal. Niskanen Center. (October 2022).

[18] Jenkins, J.D., Farbes, J., Jones, R., Patankar, N., Schivley, G., "Electricity Transmission is Key to Unlock the Full Potential of the Inflation Reduction Act," REPEAT Project, Princeton, NJ, September 2022. DOI: 10.5281/zenodo.7106176.

[19] West Virginia v. Environmental Protection Agency, 597 U.S._(2022).

The issue is what the right things are and also discerning all of the tradeoffs, being sure that we are not making ourselves worse off in the name of making ourselves better off, and that we are doing everything that we are responsible for doing in full view of all information, fully transparent, and recognizing the pros and the cons and other factors that are involved.

I am not sure that we are there yet on that front, so just a few ideas of concerns that we have, that I have, for you all to consider as you go forward.

One is the existing arrangement of providing energy, mainly via fossil fuels, for what we all like to think of as the energy, food, water nexus. If we move away from that model too quickly, we are destabilizing all of those arrangements.

And we are seeing very troubling signs of this around the world, and that is a very large caution flag for us in how we think about the timing.

I think it also raises another issue. We don't want to throw babies out with bath waters. Fossil fuels are amazing. Hydrocarbons are amazing molecules, and we are learning what to do with those every day, more creative uses, more creative applications, more creative materials, and we need the freedom to begin—to continue to experiment with those.

When it comes to sources like wind and solar, too many of the costs remain hidden, and it is really not the best way of doing things, especially from a taxpayer, customer point of view.

One of those realities that is hidden but needs to be better revealed is the relationship between the amount of material that goes into these technologies relative to the energy that comes out.

And I recommend to the committee in my testimony that you look at the International Energy Agency's report from last year, The Role of Critical Minerals in Clean Energy Transitions. I was a peer reviewer for that. I included a graphic in my testimony that I think tells the story perfectly.

We are trading off lower energy density with higher materials intensity, and we really need to think about the implications of that.

I fully agree on issues related to permitting for infrastructure and other things, but it needs to be more broad than simply transmission because we need to support the base that we have got in place now until we are ready to move on.

And I do commend the National Renewable Energy Laboratory which put out a rather provocative report in many ways, related to ideas for growing the role of wind and solar, the amount that would be needed in order to achieve any reasonable target, 50 percent, 100 percent, and the amount of transmission that would be needed and the permitting realities associated with that, which they suggest we can solve with nuclear energy, which we are fans of, but that is not an easy thing to do either. So it needs to be on the table.

When it comes to the automotive industry and the idea of electrified transmission, a colleague in the automotive industry remarked that retooling an industry that has been the backbone of our manufacturing infrastructure is truly an historic undertaking, and how. And we are not nearly there in terms of achieving the domestic content that is related.

I want to refer the committee also to a previous hearing on May 5th that was held by the Committee on Energy and Commerce, Subcommittee on Energy. And during that hearing, I lined out several concerns about material supply chains, critical mineral supply chains, and I would have to say that in the intervening year, unfortunately my concerns have only deepened.

We are simply not well-prepared to make the obligations that we are discussing today and that are present in the existing legislation, which raises a question of whether we want to continue to obligate taxpayers when we can't really meet the targets that we are laying out.

We have many competing needs for raw materials, of which defense is one, and there are increasing conversations around this. We need to be able to think about all of the physical and electrochemical properties.

We need to hold some dry powder aside in terms of budget, because we already have obligated a great deal, and we need to be able to have some in reserve.

And then finally, we need to put materials first. Rather than focusing on the end products, think about the supply chains, think about advanced materials in particular. We have a lot of suggestions to make from Rice University, and other universities on that front, for advanced carbon materials, and in especially carbon has value. We need to learn how to reap it and use it. Thank you.

[The statement of Dr. Foss follows:]

Written Testimony of Michelle Michot Foss, Ph.D.

Fellow in Energy, Minerals, and Materials

Rice University's Baker Institute for Public Policy, Center for Energy Studies

Before the Select Committee on the Climate Crisis

United States House of Representatives

Hearing on "Solving the Climate Crisis: Key Accomplishments, Additional Opportunities, and the Need for Continued Action"

December 6, 2022

Congresswoman Kathy Castor, Chair, Congressman Garret Graves and Members of the House Select Committee on the Climate Crisis, thank you for inviting me to participate on this panel.

As the 117th session of Congress concludes business and with preparations for the 118th well underway, I offer these thoughts on the myriad, complex, challenging, interwoven energy, environment and economic considerations of our times.

- **People are adaptable, as are societies overall.**

Our adaptability shows up broadly in societies, in our economies, the technologies we embrace, mobility, knowledge and communication. We are most adaptable if we are able to detect and seize opportunities, and we can most easily accomplish those things if we are healthy, educated and prepared, with ample resources at our disposal. A basic rule of thumb is that we make decisions to maximize our benefits, subject to constraints. Whatever one thinks about economics, this rule of thumb works every time—it is merely an expression of observed behavior throughout human existence.

- **As a nation we face that same rule—we want to maximize benefits of our investments, subject to budget constraints.**

The wealth of nations that are composed of free and democratic societies comes mainly from the income that we, the taxpayers and voters, provide. It certainly is

more comfortable for everyone if we the citizens are willing to fund government, than if we are not. That means free and open debate about choices in full view of all of the tradeoffs: all of the costs—not just some (or even none), and all of the presumed benefits—whether or not we want to acknowledge them. The full, total cost includes opportunity costs of doing something else, including foregone benefits that are in hand today.

- **Energy goods and services are more affordable when provided competitively, in free and open markets, than when they are not.**

A major challenge in addressing energy poverty worldwide is instilling competition. This means allowing producers and customers to discern, react to and, in their own ways, manage risks and uncertainties associated with shifting market conditions. If we distort markets to subsidize or otherwise promote energy sources, to shelter producers or customers, or engage in other actions, no matter how well intentioned they may seem, we inhibit competition and the free flow of price signals. We simply are creating new cost burdens while shifting costs from the transparency of markets to the opacity of government influence, reducing or negating benefits in the end. In no way do these approaches guarantee any form of resilience or security for national economies, for energy, the environment, food and water.

- **Government control and ownership of energy resources and systems induces often-severe energy poverty along with associated food and water poverty.**

The tendency to subsidize pricing, mostly to curry political favor, boosts demand while blocking competitive entry and provision, resulting in subpar products and services. Most of the developing world is this way, including Latin America, which is interesting to consider in light of our immigration debates. In the developed world we are adopting too many of these tendencies with mandates that effectively pick technology winners, creating domino effects in costs while degrading reliability and security. Why would anyone want that outcome? Why would we want it here in our country? Why would Europeans want this?

- **All of these dynamics are in play when it comes to what we should do, if anything, about energy supply relative to earth's climate.**

I note that, outside of the extraordinary circumstances in Europe, demand is rarely on the table. Political debates are singularly focused on replacing fuels and energy sources deemed to be out of favor with as little inconvenience as possible to voters and taxpayers. Alternatives to legacy energy sources are always presented in the most alluring terms yet the tradeoffs are acute. In Europe, the widespread upheaval and disruptive demand destruction that are taking place and cumulative economic damage should be a warning. Responsibility and accountability are expensive political penalties.

- **Removing fossil fuels (and nuclear, for those with that predisposition) from the picture bears enormous consequences for reliability and security of the energy-food-water nexus that so many worry about.**

The potential costs, which we would experience now, would surpass any hypothesized benefits that lie in the distant future. The expense column includes shifting risks and uncertainties—geopolitical, environmental, economic and other—from fuels and supply chains that we know, including our domestic resources, to raw materials supply chains that we do not. Every hypothesized benefit in avoided mortality risk associated with climate scenarios must be balanced by mortality risks associated with a chaotic scramble away from fossil fuels. As well, we must account for the huge cost of missed opportunities to keep fossil fuels in the mix with enabling technology. As the detrimental impacts of a forced march away from fossil fuels make their way through households and economies, the political costs would mount up quickly. For those who care, the risk is that energy transitions, however they might be envisioned, are delayed or even abandoned.

- **When it comes to wind and solar, far too many costs are hidden or ignored.**

To deploy wind and solar at large scale for our modern societies and economies requires industrial equipment with materials inputs that are out of balance with energy outputs. Any discerning reader of the IEA report,[1] *The Role of Critical Min-*

[1] https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions

erals in Clean Energy Transitions, can detect this well-established "hard truth." I was a peer reviewer for the IEA report, and included the key image in Supplemental Information for my testimony, below. I also recommend that readers scrutinize IEA's conclusions on cycle times for minerals supply development, upwards of 20 years for strategic metals like nickel and copper, fully compatible with what I see from my own research and experience.[2] "Cancel" renewable—that term has been misleading public attitudes for decades. Modern wind and solar systems, whether grid-based or decentralized, encompass enormous commitments of natural resources for full execution.

They also entail life cycle management requirements that have never been part of discussions. These include commitments of hydrocarbons for wind turbine blades, solar PV Plexiglas and thermal energy backup to intermittent, non-dispatchable energy and disposal of waste associated with replacement of parts that cannot be recycled or repurposed.[3]

Voters, taxpayers, customers need to discern and respond to the full cost of electricity, including all of the expense to integrate wind and solar into power systems. Levelized cost of energy (LCOE) estimates do not capture all of the costs of using wind and solar. Components are nearly all made in cheaper locations outside of the U.S. but the full brunt of systems costs are here.

While optimistic in tone, the National Renewable Energy Laboratory (NREL) report[4] in August this year noted that, "In all modeled scenarios, new clean energy technologies are deployed at an unprecedented scale and rate to achieve 100% clean electricity by 2035." Projections of capacity needs, especially for transmission, rarely incorporate cycle time realities associated with permitting. These usually are "assumed away." The NREL team suggests that, "If there are challenges with siting and land use to be able to deploy this new generation capacity and associated transmission, nuclear capacity helps make up the difference and more than doubles today's installed capacity by 2035."

Forcing wind and solar into markets with subsidies provides initial appeal to investors—we are de-risking investors by transferring risk to taxpayers and their households. These subsidies undermine power markets in ways that hurt those same, and other, investors and reduce affordability to households.

- **Transforming mobility from the flexible, fungible liquid fuels based transportation system we have now to electrification is a hugely complex undertaking.**

A colleague in the automotive industry remarked that, "Retooling an industry that has been the backbone of our manufacturing infrastructure is truly an historic undertaking." Moreover, building sufficient domestic supply chain competence will take decades.[5] The product and its potential, the interaction of electric vehicles and grids and EV-consumer interface, are attractive, to say the least. Yet many of the innovations and potential benefits, for instance autonomous driving, already are available in current combustion engine vehicles.

All of my concerns regarding supply chains, expressed in the Committee on Energy and Commerce Subcommittee on Energy hearing on May 5, 2021,[6] have only become more pronounced. Since that hearing, challenges in raw materials supply chains have become more acute, China's formidable control and dominance more sensitive. While Chinese investment has enlarged the global pie, the complicated tensions may be more than other nations can manage. Countries where opportunities exist for raw material supply growth—Latin America, Africa, Southeast Asia

---

[2] https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions/reliable-supply-of-minerals#abstract. IEA notes, "Long project lead times exacerbate the risk of a mismatch in timing between demand and the industry's ability to bring on new projects."

[3] https://www.bakerinstitute.org/research/call-action-recycling-and-waste-management-across-alternative-energy-supply-chains

[4] https://www.nrel.gov/analysis/100-percent-clean-electricity-by-2035-study.html. See https://www.nrel.gov/analysis/100-percent-clean-electricity-by-2035-study.html for news release. Also see https://repeatproject.org/docs/REPEAT_IRA_Transmission_2022-09-22.pdf for comparison.

[5] Comment during a private roundtable on "Materials Sourcing and Recycling with a Focus on Electric Vehicle Manufacturing, Use and the EV Life Cycle," May 24, 2022. Discussion centered on coordination problems associated with developing new supply chains, and the importance of recycling to the longevity of the industry. A conclusion was that gaps in policy exist ranging from tax/subsidy arrangements at various points in the recycling value chain to regulatory standards for handling and safety. These gaps are a consequence of the policy-driven pace at which the market is growing. Report forthcoming. Contact Dr. Michot Foss for details.

[6] See transcript, The Clean Future Act: Decarbonization of the Transportation Sector, May 5, 2021, Subcommittee on Energy of the Committee on Energy and Commerce, U.S. House of Representatives, https://www.govinfo.gov/content/pkg/CHRG-117hhrg47848/pdf/CHRG-117hhrg47848.pdf.

and elsewhere—must be able to sustain commercial frameworks that ensure transparent governance and oversight. The responsibilities and accountabilities embedded in geopolitical risks and uncertainties alone, along with the sheer costs of rebuilding, reshoring, friend shoring supply chains make electrification of transport daunting.

Meanwhile, energy use to support battery manufacturing is becoming a hot topic among power grid managers responsible for operations in regions where these energy intensive operations are emerging. Local utility companies have shared that even a 15% market penetration of electric vehicle models customers prefer will mean significant expenditures that regulators must allow and approve and that will affect household electricity costs. How to coordinate across the amazing array of jurisdictions and needs is of increasing concern to the auto industry representatives with whom we interact.

- **We have many competing needs for raw materials.**

One of those competing needs is defense. Civilian use of, and expansion of, raw materials supply chains can enhance defense industries. If supply chains cannot grow to accommodate both, national security will deteriorate or priorities will need to shift. We are participating in a NATO review of supply chain resilience. Within the context of that effort, the ongoing war in Ukraine and with Russia a major supplier of metals to Europe, questions are being raised about defense priorities relative to the "call" on raw materials for environmental mandates.

- **The combination of accelerating alternatives without forethought or acknowledgement of full costs while coercing abandonment of legacy fuels and systems by restricting capital flows raises the possibility of an "energy transition valley of death."** [7]

The physical and thermochemical properties and attributes of energy sources and systems and financial realities of what we face are too important to disregard, and yet they are widely snubbed. We suggest that we are beyond initial scale up and already have reached the "valley floor." The valley floor is marked by system disruptions and more complete public understanding of (and potentially, backlash to) the economic costs of energy transitions. We expect this stage to persist, exacerbated by geopolitical conflicts. The ascent up the valley's far wall begins at an undefined point and will feature an uncertain confluence of new technologies reaching commerciality. Policy resets and economic and supply chain burdens will have already imprinted their tangible and psychological impacts firmly into energy consumers and producers alike.

- **We have options, and need to hold some dry powder.**

We can pace ourselves in order to do a better job of sequencing supply chains and manufacturing, of thinking through the full set of obligations for energy balancing and reliability, and for balancing energy, environment and security. We also need time to ask, in full disclosure, a pertinent and important question: *will the pursuit of alternatives, as defined today, make us better off?* We use legacy fuels and technologies much more cleanly than decades ago, and there is considerable room for improvement. Modern fossil fuels offer vast improvements over energy sources in developing countries. Meanwhile, an accelerated pursuit of alternatives could result in increased and persistent emissions beyond current levels, vacating a fundamental goal and premise. It could threaten stability in resource rich nations. We already see these pressures in Indonesia, Chile, DRC and other nations, along with notions of producer associations, cartels, use of export bans to force investment in hoped-for value added industries and formation of powerful state owned monopolies (as China has done to consolidate its rare earths industry). Greater honesty about full costs and financial realities would help to mitigate political risk on down the road. As the national debt clock ticks, we face doing more with a lot less.

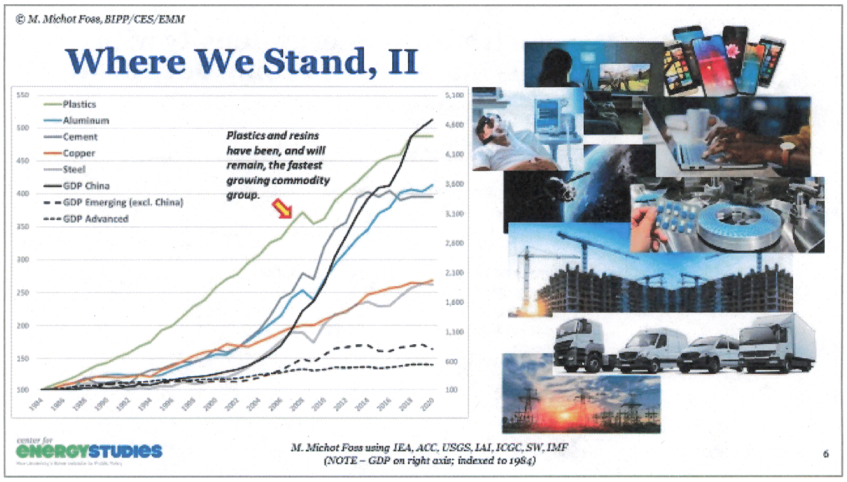
- **An important option is to put materials first.**

Policy initiatives that target specific results within political timeframes—wind and solar additions, electric vehicles on roads, semiconductor fabrication capacity—are inconsistent with supply chain realities. We need to hone supply chains before placing more obligations into service than can be met. Materials science is moving in fascinating directions, including those that recognize the value of carbon. Life on earth is carbon based. We are creatures of carbon. We can pursue advanced mate-

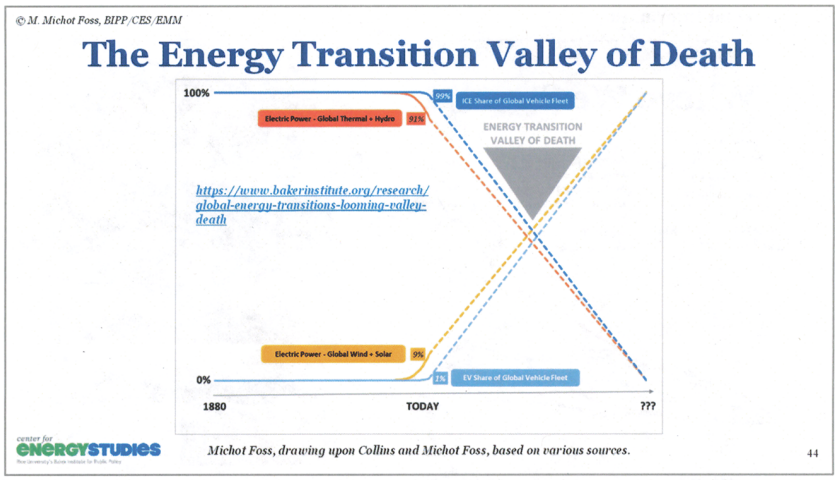
[7] https://www.bakerinstitute.org/research/global-energy-transitions-looming-valley-death.

rials that afford opportunities to displace metals with advanced carbon materials, like carbon nanotube products. For instance, we are capturing carbon through methane pyrolysis for hydrogen. We can deploy that carbon as lightweight CNT, with superior electrical and thermal conductivity and strength, to reimagine energy, vehicles, batteries, wind turbine components, construction materials and much more.[8] CNT materials already are finding their way into civilian and defense applications, providing hints of what developers could accomplish at larger scale. All it takes is imagination, risk capital, and clear thinking about novel nanomaterials.

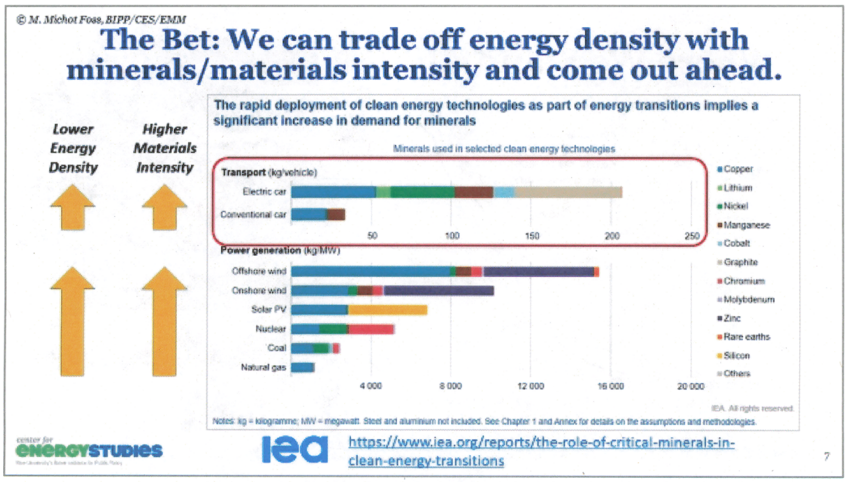
Supplemental Information



[8] Dr. Matteo Pasquali, Director, Rice University Carbon Hub, 2022 Chevron Lecture on Energy, https://vimeo.com/user112401966/review/697554103/43f25c583f.



See footnote 7.



Note – witness was a peer reviewer for the IEA report.

U.S. 2020 Electric Power Generation and Sources

Energy Source	Number of Generators	Number of Generation Locations	Generation per Location ('000 MWh)	Share of U.S. Power Generation
Nuclear	96 reactors	55	14,361	20%
Coal	668 thermal units	244	3,170	19%
Hydro	4,014 dams	153	1,865	7%
Natural Gas	6,020 thermal units	1,793	906	41%
Wind	78,008 turbines	1,422	238	8%
Solar CSP		18	174	0%
Wood		332	109	1%
Geothermal		170	93	0%
Solar PV (grid)	Unknown	4,599	19	2%

U.S. EIA, USGS (wind turbine database). Updated, see footnote 7.

Ms. CASTOR. Thank you, Dr. Foss.

Next, Ms. Johnson, you are recognized for 5 minutes. Welcome.

STATEMENT OF DANA JOHNSON

Ms. JOHNSON. Thank you so much to Speaker Pelosi, to you, Chair Castor, Ranking Member Graves, and members of this committee for responding to the growing threat of the climate crisis through the work that you are doing or have done through the Select Committee.

I want also to acknowledge the late Congressman A. Donald McEachin. He was a wise and compassionate legislator who cared about the least of these and the climate. We thank him for his leadership of the Environmental Justice for All Act, and for standing with communities in pursuit of equitable and just permitting reforms.

When I think about the accomplishments of this committee, I am honored that WE ACT was among the EJ groups asked to participate in solutions-oriented conversations prior to producing the Climate Crisis Action Plan. Considering those most impacted by climate change in your work was important. Thank you.

We believe then, as we do now, that this is our time to address climate change and environmental justice. The Climate Crisis Action Plan and your work to operationalize it with policies, as well as with funding, has been impressive. Thank you.

Please know that the people living frontline and fence line to climate and environmental hardships want to see you take action to fix the problems with the deployment of clean energy, but they will ask you to filter your work through the following questions:

Are you creating an environment for producing or using energy that will harm communities; perpetuate racially disproportionate climate burdens; and prolong the climate crises?

Unfortunately, for us, there are fossil fuel investments in the Infrastructure Bill and IRA that make it difficult to say no to these important questions.

We can also apply this screen to the important work that you are doing to expand our transmission system to increase renewable energy deployment.

Energy democracy and a just transition framework are crucial to ensuring an equitable energy transition that centers justice. This won't happen if communities are not at the table, are undermined by conflicts of interest and vapid review processes, or without appropriate legal recourse.

So I would like to share with you some considerations as you weigh options in the remainder of this congressional session as well as in the future.

We know that underfunded and understaffed projects are a major reason for delays. You did the amazing work of ensuring that nearly $1 billion of permitting process funding was included in the IRA. We now have fully funded projects, resources for staff, and investments for modernizing systems and processes. Let's bring them to fruition.

Our organization is asking you to unequivocally oppose any side deals and similar proposals. We strongly support the passage of the Environmental Justice for All Act, which is essential legislation to ensure that the clean energy transition centers protects and supports communities that have endured decades of fossil fuel pollution.

And finally, our organization is a part of a cohort of groups that are working on a set of transmission principles that we believe support clean energy deployment in an equitable way.

Broadly, these principles are calling for FERC to promulgate a role that requires all FERC jurisdictional electric transmission planning processes; provide proactive outreach to, and offer meaningful opportunities for affected communities who will be impacted by the proposed line; to weigh in on options or solutions and to help guide the planning process; to calculate all the benefits of transmission, including greenhouse gas emissions data; to take into account and minimize siting challenges, such as local environmental impacts and impacts on environmental justice and Tribal communities; and finally, to ensure that, to the extent reasonably feasible without impairing its mandate to assess and minimize environmental impacts on EJ and Tribal communities, that any proposed transmission solution make use of existing rights of way for any type of infrastructure.

We look forward to sharing a detailed version of these principles with you as part of my written testimony and other follow-ups. Thank you so much for this opportunity, and I look forward to your questions.

[The statement of Ms. Johnson follows:]

Written Testimony of Dana Johnson

Senior Director of Strategy and Federal Policy

WE ACT for Environmental Justice

Before the Select Committee on the Climate Crisis

United States House of Representatives

Hearing on "Solving the Climate Crisis: Key Accomplishments, Additional Opportunities, and the Need for Continued Action"

December 6, 2022

WE ACT for Environmental Justice (WE ACT) is a Northern Manhattan-based membership organization whose mission is to build healthy communities. We do this by ensuring that communities of color and people of low-income lead in creating sound and fair environmental health and protection policies and practices.

We are the first people of color-led environmental justice organization in New York State and are the only environmental justice group with a permanent office in Washington, DC. Our Federal Policy Office also serves as the administrative anchor for the Environmental Justice Leadership Forum (EJ Forum)—a network of approximately 50 environmental justice advocates and groups in 22 states working together to advance policies that ensure the protection and promotion of communities of color and low-income communities throughout the U.S.

My name is Dana Johnson and I serve as Senior Director of Strategy and Federal Policy at WE ACT. I have more than 20 years of strategy, operations and advocacy professional experience in fields ranging from health and science advocacy, climate and environmental justice policies to cultural competence and diversity and inclusion leadership.

Thank you for the opportunity to testify today.

I want to thank Speaker Nancy Pelosi for responding to the growing threat of the climate crisis by convening the Select Committee on Climate Crisis; Chair Kathy Castor for her leadership in identifying and advancing ideas, policies and practices that can achieve substantial and permanent reductions in the contributors to climate change and environmental injustices; and all Members of the SCCC for your contributions to the work of the committee, including the late Congressman A. Donald McEachin. Mr. McEachin was a wise and compassionate legislator who cared about "the least of these" and the climate. He was an environmental justice champion in his district, the Halls of Congress, and communities across this country. Thank you, Congressman McEachin, for your co-leadership of the Environmental Justice for All Act and standing with communities in the fight for equitable and just permitting reform.

Climate change is a risk multiplier [1] because it exacerbates the environmental, financial, political and social barriers that exist within environmental justice communities. It increases the frequency, intensity and duration of heat waves that result in health risks, particularly for young children and the elderly. Recent estimates link more than 1,300 deaths in the U.S. to extreme heat events.[2] In New York City, where WE ACT is headquartered, it is predicted that up to 75 days of the year could reach 90 degrees Fahrenheit by 2080 [3] and heat mortality rates will continue to rise significantly, resulting in 3,300 deaths annually by the same year.[4]

Climate change can also impact human health by worsening air and water quality and increasing the spread of certain diseases.[5] By the time that the SCCC report, *Solving the Climate Crisis: The Congressional Action Plan for a Clean Energy Economy and a Health Resilient and Just America* was released in mid-2020, COVID–19 cases in the U.S. had surpassed 2 million.[6] Low-income communities and communities of color are cumulatively exposed to disproportionate levels of air pollution and other factors that result in a higher incidence of the underlying medical condi-

---

[1] https://www.calhealthreport.org/2018/08/28/already-vulnerable-populations-face-greater-risks-climate-change-report-finds/

[2] The impacts of climate change on human health in the United States: A scientific assessment. U.S. Global Change Research Program. https://health2016.globalchange.gov

[3] WE ACT for Environmental Justice: Extreme Heat Policy Agenda. 2022.

[4] IBID.

[5] https://www.epa.gov/climatechange-science/impacts-climate-change

[6] https://www.cdc.gov/museum/timeline/covid19.html

tions that are recognized as being especially lethal to those who contract COVID–19[7] and we saw that reality in morbidity and mortality rates.[8]

WE ACT for Environmental Justice was among the environmental justice advocates asked to participate in solutions-oriented conversations that the SCCC held across the country prior to producing the report. Below is our initial response to the development and release of the policy recommendations:

> *"The COVID–19 pandemic and its disproportionate havoc in communities of color and low income is a symptom of a larger issue: a legacy of structural racism that resulted in policies and practices that facilitate extreme weather zones, economic impoverishment, environmental degradation, diminished health states, a lack of social cohesion, and other adverse living conditions. This is our time to address this legacy and the Climate Crisis Action Plan can be an effective tool for advancing substantive discourse and producing just laws that center remediation in climate policy, deliver energy democracy and economic benefit to low-income communities, improve indoor and outdoor air quality to actually meet attainment standards, and produce green spaces and healthy food systems that positively influence our morbidity and mortality rates. We look forward to working with members of the Select Committee on the Climate Crisis and all of our congressional leaders to create bold and equitable solutions that deliver on the pillars of the Climate Crisis Action Plan, where appropriate, and that lead to tangible gains in resolving the climate crisis."*

Key Accomplishments: Uplifting A Robust Body of Climate Policy Recommendations

WE ACT viewed COVID–19 as an environmental justice tipping point that required leveraging the SCCC Climate Action Plan to uplift and advance climate policies that could address legacy harms, transition our energy economy to less emitting sources, prepare and empower all members of the labor force for a green energy future, and build healthy communities for all Americans. We collaborated with partners in Colorado, Michigan and New York to organize a series of nonpartisan virtual town halls that brought elected officials and their constituents together for engagement on the more than 700 environmental, public health, and economic recommendations in the Climate Crisis Action Plan.

These events included:

- Colorado—Cumulative Pollution: A Call to Action & Response. In this event, local advocates articulated a critical need to advance clean air, clean water and pollution mitigation solutions. More than 70 community members, 5 staffers with Colorado State government, and a representative of the House Committee on Natural Resources participated.
- Michigan—Achieving Environmental Justice in Michigan's Most Polluted City (Detroit). Eighteen community members joined Congresswoman Rashida Tlaib in an intimate conversation that connected recommendations from the Climate Action Plan with pollution mitigation, legacy cleanups, and other environmental injustices present in one of the most polluted zip codes in America: 48217.
- New York—Powering Change: New York Models for Equitable Energy Policy. We convened the leading voices in energy policy in New York State and, with Congressman Paul Tonko, identified policy recommendations in the Climate Action Plan that focused on training a green workforce, investing in community renewable energy, and increasing energy efficiency efforts. There were 5 staffers from the New York City government; 8 staffers from the New York State government; and 4 Congressional staffers among the more than 100 participants.

A follow up to the recommendations, WE ACT and members of the EJ Forum produced the Green Jobs Report: Creating a Green Workforce, Community-Based Solutions for a Diverse Green Jobs Sector.[9] This timely report outlines imperatives for bringing underrepresented groups into climate change work and the clean energy economy, and offers policy and best practice prescriptives for closing diversity gaps in the renewable energy industry.

Key Accomplishments: Historic Funding to Address Climate Change and Its Impacts

For too long, environmental racism has perpetuated disinvestment, environmental degradation and disproportionate health impacts in communities of color and areas of low income. The $1.2 trillion of infrastructure investments in the Infrastructure

---

[7] https://time.com/5815820/data-new-york-low-income-neighborhoods-coronavirus/
[8] https://projects.iq.harvard.edu/covid-pm/home
[9] https://www.weact.org/publications/green-jobs-report/

Investment and Jobs Act and $369 billion in the Inflation Reduction Act have the ability to bring overdue resources to support legacy pollution cleanups, upgrade water infrastructure, and begin the process of reducing carbon emissions from the energy, transportation, building and other sectors in ways that are outlined in the Climate Action Plan. WE ACT was pleased to see among the investments, allocations for:

- $50 billion in climate resiliency;
- $55 billion in clean drinking water;
- $21 billion in environmental remediation;
- $73 billion in energy transmission buildout;
- ~$48 million in environmental justice investments for:
  - Air pollution monitoring and technical assistance;
  - Upgrades to medium and heavy duty vehicles;
  - Technical and financial assistance to improve access to clean air and clean water;
  - Environmental justice and climate data collection; and
  - Competitive grants for community-led projects.

Challenges: Attacks on Bedrock Environmental Processes

The infrastructure bill and the side deal attached to the Inflation Reduction Act have the potential to usher in a permanent weakening of the National Environmental Policy Act (NEPA) by shortening opportunities for public input, abbreviating permitting procedure for large infrastructure projects, increasing state authority to exclude projects from the NEPA review process, and by reducing or eliminating requirements to disclose conflicts of interest. The IRA addresses concerns about the pace of project approvals and supports modernizing the process by investing nearly $1 billion in staff, systems and tools. We should use these investments as a foundation to build even stronger protections for all of us—including those most vulnerable to the effects of environmental racism and climate change.

Challenges and Opportunities: Equitable Deployment of Clean Energy

Principles for Accelerating Clean Energy Deployment Through Transmission Buildout in an Equitable Clean Energy Future

The below set of Principles for Modifying the Federal Power Act to Accelerate Clean Energy Deployment through Transmission Buildout in an Equitable Clean Energy Future presents ideas to address challenges related to transmission siting, cost allocation and planning. Importantly, this set of principles is **not** *meant to be considered alongside any side-deal type proposal related to environmental permitting or boosting fossil fuel development at communities' expense.* ***We must continue to unequivocally oppose the side deal and similar proposals.*** *In addition to this transmission-focused set of recommendations,* ***we strongly support passage of the*** **Environmental Justice for All Act***, which is essential legislation to ensure that the clean energy transition centers, protects and supports communities that have endured decades of fossil fuel pollution. It is important to recognize that while this proposal is intended to improve the permitting process for certain transmission projects, it is one small piece of what is needed to address transmission-related barriers to achieving a 100% clean grid, and* ***work can be done now using existing authorities****, particularly with the passage of the IIJA and IRA. Finally, some of the recommendations below reaffirm existing FERC authority to advance transmission-related reform.*

Centering Environmental Justice in the transition to a renewable grid is critical to protect communities of color and areas of low income, who often face the first and worst effect of climate change. Energy democracy and a just transition framework are crucial to ensure an equitable energy transition that centers justice. This includes ensuring communities have the opportunity to fully participate in projects that will impact them.

With the passage of the Infrastructure Investment and Jobs Act (IIJA) and the Inflation Reduction Act (IRA), the United States has an unprecedented opportunity to dramatically cut our greenhouse gas emissions. To deliver on the promise of these acts, by 2030, we need to increase renewable energy deployment four-fold over today's levels. For that to happen, we also have to double the rate at which we're building out the transmission system and simultaneously shift to building more large, interstate lines instead of the small local lines that we mostly build today, while also continuing to grow distributed clean energy resources.

Broad claims about permitting being broken in the U.S. are generally unsupported by data. The absence of data doesn't mean changes aren't needed, but these broad claims are not helpful in identifying solutions. We expand our transmission system by about 1% annually, and inadequate planning processes are the principal bottleneck preventing that rate from increasing.

Existing data, conversations with industry, and our collective expertise point to one major obstacle that can be fixed through federal legislation: state-by-state permitting of certain large transmission projects. Every state touched by these lines effectively has veto power. The misalignment of costs and benefits caused by state-by-state permitting can be fixed at the federal level, but we must act quickly and boldly.

The principles offered below should guide transmission planning reform and the development of new federal legislation to move permitting and cost allocation of large, inter-state transmission lines to the federal level where all of the costs and benefits can be assessed holistically while enhancing the ability of communities to participate in the permitting process.

Electric Transmission Planning

- FERC must promulgate a rule requiring all FERC-jurisdictional electric transmission planning processes to achieve at a minimum, the following:
  - Provide proactive outreach to and offer meaningful opportunities for affected communities who would be impacted by the proposed line to weigh in on options or solutions and help guide the planning determination.
  - Calculate all the benefits of transmission, including GHG emissions data.
  - Take into account and minimize siting challenges such as local environmental impacts and impacts on environmental justice and tribal communities.
  - Ensure that, to the extent reasonably feasible but without impairing its mandate to assess and minimize environmental impacts on EJ and Tribal communities, the proposed transmission solution makes use of any existing rights of way, for any type of infrastructure.
- FERC must establish Environmental Justice liaisons (either within or outside of the Office of Public Participation) to support ongoing consultation and advanced planning in environmental justice communities and tribal nations. Include a budget for these positions.
  - Environmental Justice liaisons must establish a community partnership and communications program that employs the strengths of tribal, state, and local governments, as well as community-based organizations, faith-based organizations, schools, media, businesses, social services, ethnic organizations, and others to support transmission planning and implementation in affected communities.
- FERC must promulgate a rule requiring interregional electric transmission planning or specifying that regions plan for a minimum amount of interregional transfer capacity.

Siting/Permitting

- In addition to maintaining the National Interest Electric Transmission Corridor process, provide a bright-line definition for when a transmission line developer may obtain FERC review of its request to site regional or interregional transmission in lieu of existing review processes. If a developer of such a line seeks siting for the line and files an application with FERC, FERC must review the line.
- Two separate routes for developers to secure FERC review:
  1. The existing National Interest Electric Transmission Corridor process; or
  2. Direct FERC review if all of the following apply:
     —2 or more states;
     —1000 MW or larger;
     —Enables renewables, reduces congestion or improves reliability;
     —Selected via the process laid out in "Electric Transmission Planning" Section.
- FERC siting review process:
  - In its review process, FERC must provide stronger protections for all impacted stakeholders—especially landowners and tribal and environmental justice communities—than it currently does under the Natural Gas Act, by rule or legislation. At a minimum, FERC must:

—Assess the environmental impacts on impacted landowners and communities, including tribal and environmental justice communities.
—Ensure its methodology accurately accounts for all impacted environmental justice communities.
—Ensure effective public notice to all impacted landowners and communities.
—Ensure that, to the extent reasonably feasible but without impairing its mandate to assess and minimize environmental impacts on environmental justice and Tribal communities, the route makes use of any already disturbed existing rights of way, for any type of infrastructure.
—Ensure meaningful and timely opportunity for input from impacted landowners and communities, including tribal and environmental justice communities, and state and local governments.

- Ensure close and proactive interagency coordination where overlapping permitting jurisdiction exists, especially with agencies charged with managing federal public lands.
- Incorporate a transmission advisory board provision similar to what is in the CHARGE Act, with the addition of mechanisms to ensure accountability.

Cost Allocation

- Add legislative language for broad FERC cost allocation.
  - Require FERC to adopt a cost allocation methodology for regional and interregional lines that holistically reflects the multiple benefits provided by transmission solutions, including economic, reliability, operational, public policy, resilience to extreme weather, and environmental benefits (including reductions in carbon emissions and reducing harm to EJ communities).
  - Permit FERC to allocate costs for such lines in proportion to share of demand for energy within the region served by the line where multiple benefits exist across the load served or where a benefit is known to exist but cannot reasonably be quantified.
  - Explicitly allow FERC to set cost allocation for transmission to offshore wind.

Ms. CASTOR. Thank you, Ms. Johnson.

Next, we will go to Dr. Moerman. Welcome, you are recognized for 5 minutes.

STATEMENT OF REV. DR. JESSICA MOERMAN

Rev. Dr. MOERMAN. Thank you. Thank you Chairwoman Castor, thank you Ranking Member Graves, and thank you to everyone on the committee for the opportunity to speak with you today.

I want to start by offering my deepest condolences for the passing of Representative McEachin. He was a man of faith, with a deep commitment to creation care, and giving voice to those disproportionately burdened by pollution.

I am honored to testify today on behalf of the Evangelical Environmental Network, and our over 5 million pro-life Christians who have acted with us over the last 5 years for clean air, clean water, and a safe climate.

At the Evangelical Environmental Network, we believe all human life is sacred and worthy of protection. We are pro-life from conception to natural death, a theology that we share with the National Association of Evangelicals.

As pro-life evangelicals, we have a special concern for children, both born and unborn, in that we believe that we have a moral and Biblical mandate to defend the health of all God's children.

We want children to be born healthy and unhindered by the ravages of pollution and climate-fueled extreme heat that medical research shows can rob children of their God-given potential before they even breathe their first breath.

Simply put, for us, acting on climate and pollution is a matter of life.

Now, over the tenure of this committee, we have seen banner year after banner year for transformative policy to defend life from the harmful impacts of climate and pollution.

And the majority of these wins were bipartisan. We can look to the Great American Outdoors Act, the Energy Act of 2020, the Congressional Review Act on Methane, and the Bipartisan Infrastructure Law, the CHIPS and Science Act.

We can even look to key pieces of climate provisions in the Inflation Reduction Act that have origins in bipartisan policy.

As we look to the 118th Congress, I sit before you with a very simple message: the work is not done, and we can't afford 2 years of inaction. As a climate scientist, and frankly as a mother, I believe, like most people in this room, I want to pass down a healthy future and a safe climate to my kids, and I strongly urge the members of this committee to keep the momentum up and continue to work together.

For the remainder of my testimony, I would like to highlight two areas that I think are set for strong bipartisan action that I give in detail in my written testimony.

First, defending life and wisely stewarding our resources by cutting wasteful methane leaks, and then secondly, harnessing the power of God's creation through natural climate solutions.

Cutting wasteful methane leaks from oil and gas production is an incredible opportunity to advance health, quickly reduce climate warming, and reclaim precious natural resources at a time when American families in the world can't afford any wasted drop.

Medical research shows that living and working near natural gas and methane production is linked to heart failure, cancer, asthma, birth defects, lower birth weights, all due to pollution from emissions of methane, benzenes, and other toxins associated with production.

As an evangelical pastor, I take seriously what the Bible says in Proverbs, Chapter 13, Verse 22, that we are to leave a good inheritance for our children. Birth defects, breathing problems, severe health complications, this is no inheritance to leave.

I urge this committee to continue to work to defend health and the lives of over 17 million Americans, including over 3 million children who live, work, or go to school within a half mile health threat radius of an oil and gas facility.

Important investments in the Bipartisan Infrastructure Law and the IRA do this work. However, it puts the onus and burden on the American taxpayer to clean up the messes of industry.

In the name of fiscal responsibility, as well as fairness to the American taxpayer, I urge the 118th Congress to work together on commonsense oil and gas bond reform to ensure that the full cost of reclamation and remediation is covered.

To solve the climate crisis, we also need to harness the power of God's creation, and advance natural climate solutions, which, according to peer reviewed research, can get us approximately a third of the way towards our carbon reduction goals.

America's farmers, foresters, and ranchers are among our most dedicated stewards of God's creation, and are a key part of the climate solution. I was just meeting with them in the Midwest this last week, and what I heard is that the IRA's investments in the

USDA and Farm Bill conservation programs that they are critical to making our food producers more resilient to climate-fueled extreme weather, while also building soil health and increasing profitability.

They ask that I share that we not cut these provisions in the reauthorization of the Farm Bill, because they want to put in place climate-smart agriculture provisions. They simply don't have all the financial support that they need to do that.

And so with that, I want to thank the committee for your work. Again, there is much more to be done, and I urge you to continue to work together because our children's health and future depends on it.

[The statement of Rev. Dr. Moerman follows:]

Written Testimony of Rev. Dr. Jessica Moerman

Vice President, Science and Policy

Evangelical Environmental Network

Before the United States House of Representatives

Select Committee on the Climate Crisis

Hearing on "Solving the Climate Crisis: Key Accomplishments, Additional Opportunities, and the Need for Continued Action"

December 6, 2022

Good afternoon. Thank you, Chairwoman Castor, Ranking Member Graves, and Members of the Committee for convening this hearing. I thank every member of this committee for their leadership and common commitment to working towards making America's energy and other critical systems the cleanest in the world—a goal that every American can be proud of and that is indispensable for giving our children and grandchildren the bright and healthy future they deserve.

I am honored to testify on behalf of the Evangelical Environmental Network. We are the largest evangelical group in America with a ministry to care for God's creation, with over 5 million pro-life Christians having taken action with us over the last five years for clean air, clean water, and a safe climate.

Our mission at the Evangelical Environmental Network is to faithfully and obediently live out the Biblical mandate to care for God's creation and our vision is for a world where all God's children have the hope and expectation for a healthy environment and safe climate to thrive in.

As evangelical Christians, we believe that all human life is sacred; that each person conceived is of equal and innate value and dignity, and that all human life is worthy of protection. At the Evangelical Environmental Network, we are pro-life from conception to natural death—a theology we share with the National Association of Evangelicals, but also one we share with Catholic social teaching and the guidance of Pope Francis in his encyclical letter, Laudato si' on care for our common home (24 May 2015).

As pro-life evangelicals, we have a special concern for children—both born and unborn—and have a moral and Biblical mandate to defend the health of all God's children. We want children to be born healthy and unhindered by the ravages of pollution and climate-fueled extreme heat that can rob them of their God-given potential even before they take their first breath.

Simply put, for us, climate care is a matter of life.

Cutting Methane Leaks: Defending Life and Wisely Stewarding Our Resources

We are grateful for the prosperity our modern energy system has brought, but there has been a shadow side to carbon-based energy—namely its emission of planet-warming greenhouse gases and toxic pollutants that contaminate the air we breathe and the water we drink.

Medical research shows that children are among the most at risk for developing life-threatening conditions from exposure to fossil fuel pollution and that fossil fuel

combustion is a leading environmental threat to children's health.[1] A multitude of studies link living in proximity to natural gas development and methane production to birth defects to the brain, spine, and spinal cord[2,3] and to lower birth weight,[4] which is associated with breathing problems and immature lungs, bleeding inside the brain, serious inflammation of the intestines (necrotizing enterocolitis), and long-term complications like cerebral palsy, deafness, blindness, and developmental delay.

As an evangelical pastor, I take seriously what the Bible says in Proverbs 13:22: that it's our duty to leave a good inheritance to future generations. Birth defects, breathing problems, and severe health complications are no inheritance to leave to our children.

This isn't a small or isolated problem: in the United States, the American Lung Association reports that more than *40 percent of Americans* live in areas with unhealthy, polluted air, causing up to 200,000 American deaths every year.[5] Mapping of oil and gas infrastructure shows that over 17 million Americans, including 3.2 million children, live, work, or go to school within the 0.5 mile health threat radius of an oil and gas facility.[6] Over 85% of the medical studies[7] that have studied the gas industry's impact on health find that pollution from oil and gas facilities and infrastructure is highly detrimental to the health of adults too—this includes heart failure,[8] asthma,[9,10] and the exposure to known carcinogens.[11]

Not only does leaking oil and gas infrastructure spew harmful pollution like methane, benzene, other volatile organic compounds (VOCs), and toxins that threaten our children's right to achieve their God-given potential and an abundant life, methane is a greenhouse gas 86 times more potent than CO_2 in the first twenty years—making fugitive and leaking methane an imperative for any hope in keeping temperature below 1.5°C by 2050 or sooner. Methane is responsible for at least one-quarter of the climate warming we are experiencing today.[12] Warmer temperatures produce more smog, increasing asthma, another serious health concern.

Because of methane's significantly stronger warming punch and shorter lifespan in the atmosphere, reducing methane emissions is the fastest way to slow the escalating rate of global warming while defending the health of all God's children.

That's why we are grateful for key policies that tackle methane leaks and emissions passed this Congress as part of the Infrastructure Investment and Jobs Act (aka Bipartisan Infrastructure Law) and the Inflation Reduction Act. This includes the $4.7 billion investment to states from the Bipartisan Infrastructure Law to plug orphaned oil and gas wells and the Inflation Reduction Act's Methane Emissions Re-

---

[1] Perera F. (2017) Pollution from Fossil-Fuel Combustion is the Leading Environmental Threat to Global Pediatric Health and Equity: Solutions Exist. *Int J Environ Res Public Health.* 2017;15(1):16. doi:10.3390/ijerph15010016.

[2] Lisa M. McKenzie, Ruixin Guo, Roxana Z. Witter, David A. Savitz, Lee S. Newman, and John L. Adgate, Birth Outcomes and Maternal Residential Proximity to Natural Gas Development in Rural Colorado, Environmental Health Perspectives doi:10.1289/ehp.1306722.

[3] Casey J.A., et al., "The association between natural gas well activity and specific congenital anomalies in Oklahoma, 1997–2009," Environment International, Volume 122, January 2019, 381–388, https://www.sciencedirect.com/science/article/pii/S0160412018317999?via=ihub.

[4] Stacy SL, Brink LL, Larkin JC, Sadovsky Y, Goldstein BD, Pitt BR, et al. (2015) Perinatal Outcomes and Unconventional Natural Gas Operations in Southwest Pennsylvania. PLoS ONE 10(6):e0126425. doi:10.1371/journal.pone.0126425.

[5] Bowe B, Xie Y, Yan Y, Al-Aly Z. Burden of Cause-Specific Mortality Associated With $PM_{2.5}$ Air Pollution in the United States. JAMA Netw Open. 2019;2(11):e1915834. doi:10.1001/jamanetworkopen.2019.15834.

[6] https://oilandgasthreatmap.com/threat-map/

[7] Hays J, Shonkoff SBC (2016) Toward an Understanding of the Environmental and Public Health Impacts of Unconventional Natural Gas Development: A Categorical Assessment of the Peer-Reviewed Scientific Literature, 2009–2015. PLoS ONE 11(4):e0154164. doi:10.1371/journal.pone.0154164.

[8] McAlexander TP, Bandeen-Roche K, Buckley JP, Pollak J, Michos ED, McEvoy JW, Schwartz BS. Unconventional Natural Gas Development and Hospitalization for Heart Failure in Pennsylvania. J Am Coll Cardiol. 2020 Dec 15;76(24):2862–2874. doi:10.1016/j.jacc.2020.10.023. PMID: 33303076; PMCID: PMC7735256.

[9] Rasmussen S.G., et al., "Association Between Unconventional Natural Gas Development in the Marcellus Shale and Asthma Exacerbations," JAMA Internal Medicine, 2016, 176(9), 1334–1343, https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2534153.

[10] Willis, M. D., et al., "Unconventional natural gas development and pediatric asthma hospitalizations in Pennsylvania, Environmental Research, 166, 402–408, October 2018, https://www.ncbi.nlm.nih.gov/pubmed/29936288.

[11] McKenzie, L.M., et al., "Ambient Nonmethane Hydrocarbon Levels Along Colorado Northern Front Range: Acute and Chronic Health Risks," Environmental Science Technology, April 17, 2018, 52(8):4514–4525, https://pubs.acs.org/doi/10.1021/acs.est.7b05983.

[12] lissa B Ocko et al 2021 Environ. Res. Lett. 16 054042.

duction Program, which will incentivize larger gas operators to reduce their methane emissions quickly and efficiently.

Policies encouraging oil and gas operators to seal wasteful methane leaks and responsibly steward our nation's precious natural resources are more important than ever during this time when American families and the world cannot afford any wasted drop.

State-of-the-art analysis using ground-based facility-scale measurements and validated with aircraft observations finds that 12 million metric tons of methane is leaked and wasted each year.[13] Much of these emissions come from unaddressed abnormal "super-emitter" events—the infrequent but very large emissions events that arise from some improper conditions at oil and gas sites. Low-producing wells are also a large source of leaked methane. Although they produce only 6% of total U.S. methane and oil production, these low-producing wells are found to release 50% of all methane emissions.[14]

Nationally these porous wells spew enough methane to supply over 3.6 million homes in the U.S. every year. That's $1.3 billion in wasted energy. Put another way, these leaks amount to more than 10% of the gas these wells produce. And this wasted methane does not disappear harmlessly into the wind. It drifts up to our atmosphere where it worsens climate change, and it settles into the lungs, hearts, and brains of our children and grandkids.

The good news is that there are no technical barriers to rapidly reducing emissions from the oil and natural gas industry. The technology and innovation required to stop these leaks is already at hand and actually in use in some areas when required by various jurisdictions. Critical practices include: requiring frequent leak detection and repair programs which are estimated to reduce leaks by 90% and reclaim 4.5 million tons of methane; equipment upgrades to newer innovations including the replacement of gas-driven pneumatic equipment, compressors and dehydrators, and reducing routine venting and flaring of gas from oil wells, storage tanks, and emissions from well-completions.[15]

However, despite these readily available technologies, industry on the whole has shown little or no willingness to voluntarily put these innovations into place. Jesus teaches in Luke 16:10, "Whoever can be trusted with a little can also be trusted with a lot, and whoever is dishonest with a little is dishonest with a lot."

Before trusting industry with more methane drilling, Congress must secure a commitment that it can responsibly manage the precious natural resources we already entrust to them and reduce methane leaks. As the geopolitical landscape requires increased energy security and independence, we must capture this wasted gas first before sinking fortunes into drilling new wells that will only continue to harm our children and contaminate God's amazing creation.

Looking ahead, the 118th Congress plays a critical role in encouraging wise stewardship of our precious natural resources and protection of our children's health and future. Wise stewardship is actually good for business. Reducing methane leaks through frequent leak detection and repair, adopting innovative new equipment, and regular site monitoring means more methane will make it to market. Industry stands to increase their bottom lines by plugging wasteful methane leaks and recapturing fugitive methane emissions, making cutting methane pollution a win-win-win.

Another opportunity for better health, fiscal responsibility, and fairness for the American taxpayer is to reform our oil and gas bonding structure. At EEN, we are grateful for the investments in the Bipartisan Infrastructure Law to plug orphaned and abandoned wells, but it is fiscally irresponsible and unfair for American taxpayers to foot the bill (not to mention the associated health care burdens) to pay to clean up the messes of the oil and gas industry.

The $4.5 billion investment in the BIL, however, will only cover part of the problem of orphaned wells[16] that companies have left to the U.S. This is a problem that would not exist if proper bonding requirements were in place from the start or had

---

[13] Alvarez, RA et al. (2018), "Assessment of Methane Emissions from the U.S. Oil and Gas Supply Chain," Science 361, 186 (available at https://science.sciencemag.org/content/361/6398/186).

[14] Mark Omara, Daniel Zavala-Araiza, David R. Lyon, Benjamin Hmiel, Katherine A. Roberts, and Steven P. Hamburg https://doi.org/10.1038/s41467-022-29709-3, Nature Communications: April 19, 2022.

[15] Clean Air Task Force (2020). Reducing Methane from Oil and Gas: A Path to a 65% Reduction in Sector Emissions. Availbable at https://cdn.catf.us/wp-content/uploads/2020/04/21092556/Path_to_65pc_OG_reduction-Dec2020_update.pdf.

[16] IOGCC, Idle and Orphan Oil and Gas Wells 14 (2019), available at https://iogcc.ok.gov/sites/g/files/gmc836/f/documents/2021/2020_03_04_updated_idle_and_orphan_oil_and_gas_wells_report.pdf.

been updated since the 1950's.[17] Without adequate bonding requirements, we are doomed to repeat these mistakes yet again and saddle the next generation with despoiled land, water, and air and a billion-dollar price tag for a mess they didn't make.

We urge the 118th Congress to come together to defend our children's health and the American taxpayer by demanding that new bonding requirements cover the full cost of real remediation. This includes actual third-party bonding per permit—not self or blanket bonding. These issues are correctly and thoroughly discussed in an outstanding white paper entitled ***Broken Promises*** by *Conservatives For Responsible Stewardship*.[18]

Finally, even with today's high energy prices, analysis shows that changing bonding, instituting a methane fee, and increasing royalties will not increase costs for Americans but is necessary to hold industry accountable.[19]

Harnessing the Power of God's Creation with Natural Climate Solutions

To solve the climate crisis, we need to harness the power of God's creation and advance natural climate solutions. According to peer-reviewed research, natural climate solutions "can provide 37% of cost-effective CO_2 mitigation needed through 2030 for a >66% chance of holding warming to below 2°C. One-third of this cost-effective national climate solutions mitigation can be delivered at or below 10 USD $MgCO_2 - 1$." [20]

America's farmers, foresters, and ranchers are among the most dedicated stewards of God's creation and are a key part of the solution to climate change. To solve the climate crisis and make our food producers more resilient and less vulnerable to climate-fueled extreme weather, we need to unleash the innovation of the American farmer.

Just last week, I met with farmers across Iowa and the Midwest. Over and over again they told me that extreme weather was making what is already a challenging job even more difficult. Extreme rainfall events, at the rate of 4-inches of rainfall per hour, that had never been seen before are now common occurrences. As these storms dump massive amounts of rainfall, soil they spent years enriching washed away in a matter of hours. Investments in terraces, designed to hold 2 inches of rainfall per hour, were destroyed. Intense derechos—massive, straight-line storms with hurricane and tornado-force winds, heavy rains, and flash floods—stripped away soil and destroyed farm equipment, buildings, and critical infrastructure.

On the other hand, Iowa farmers are currently facing two back-to-back years of drought. Many told me they had exhausted their moisture reserves last year and they don't have any left if drought persists for a third year.

While farmers plan for variability in the weather—that is simply part of doing business—what I heard is that the increasingly extreme weather fueled by climate change, the whiplash of unprecedented floods followed by unprecedented drought, and unpredictable timing for planting and harvesting as spring temperatures come sooner and summer lasts longer, is making life and business even more difficult on the farm. Climate change is also making it harder for soils to naturally store carbon. Warming causes widespread soil carbon losses by speeding up the decay of soil organic matter. Farming is hard enough these days, and it doesn't need to be made any harder. Climate change is doing just that.

The good news is that soil and water conservation practices that make farmers more resilient to extreme weather, like no-till and cover cropping, is also smart climate mitigation that sequesters carbon and increases soil organic matter for increased productivity. Cover cropping protects soils from being stripped away by extreme rainfall and winds, allows for rapid water infiltration during floods, and better retains soil moisture to buffer against drought.

The Inflation Reduction Act's $40 billion for agriculture, forestry and rural development is the investment that our farmers, foresters, and ranchers need to put in place the sustainable agriculture practices they desire to implement but find financially difficult to do. This includes nearly $20 billion in funding for critical USDA and Farm Bill programs and technical assistance that farmers told us they need, including the Agricultural Conservation Easement Program (ACEP), Conservation

---

[17] GAO, BLM Should Address Risks from Insufficient Bonds to Reclaim Wells 11 (Sept. 2019), available at https://www.gao.gov/assets/gao-19-615.pdf.

[18] https://www.conservativestewards.org/wp-content/uploads/2021/10/CRS-bonding-analysis_FINAL.pdf.

[19] Oil & Gas Reform Won't Raise Prices at the Pump, https://www.taxpayer.net/wp-content/uploads/2021/10/OG-Reform-and-Gas-Prices-Primer.pdf.

[20] Bronson W. Griscom, et al., "Natural Climate Solutions," Proceedings of the National Academy of Sciences (vol. 114, no. 44): October 31, 2017.

Stewardship Program (CSP), Environmental Quality Incentives Program (EQIP) and Regional Conservation Partnership Program (RCPP). In addition, it includes $14 billion for rural development, including rural broadband to support the development of renewable energy and precision agriculture.

Next year, the 118th Congress is tasked with reauthorizing the Farm Bill. The message we have received from farmers is to increase—not cut—Farm Bill authorization levels for conservation programs and practices. These programs are historically oversubscribed with large backlogs.[21] Many farmers who wish to access these programs and implement sustainable and climate-smart agriculture practices simply cannot because there is not enough funding. For example, in FY2020, USDA only funded 27% of eligible program applications received for EQIP, 35% for CSP, and 43% for Agricultural Management Assistance (AMA).

Congress must come together to preserve investment levels for conservation agriculture set in the Inflation Reduction Act. Additionally, the 118th Congress should also invest in farmer-to-farmer and research-to-farmer learning pilot programs that are critical avenues for farmers to learn about and implement sustainable and climate-smart agriculture practices. We also call for the passage of the Growing Climate Solutions Act, which will establish a much-needed Verifier Certification Program providing a uniform carbon measuring method that ensures farmers a fair price and an accountable carbon market. The Growing Climate Solutions Act provides a way for the agriculture community—especially family farms—to increase income through market-based incentives, enrich the soil, sequester carbon, and empower American farmers as part of the climate solution.

Ms. CASTOR. Thank you, Dr. Moerman.

Next, Brad Markell, thank you for being here. You are recognized for 5 minutes.

STATEMENT OF BRAD MARKELL

Mr. MARKELL. Thank you, Chair Castor and Ranking Member Graves, for the opportunity to testify before the committee on behalf of the 12–1/2 million working people in 58 unions in the AFL–CIO.

The climate crisis affects working Americans in nearly every aspect of their lives, and how we respond will shape our lives for the foreseeable future. For many workers, how these changes affect their employment prospects are top of mind.

We are beginning to see how investments in new technologies will reshape industries and the impacts on workers and communities. There are a lot of issues in that bucket.

Working people and the less fortunate often bear the heaviest burden of the effects of climate change. Fires, floods, droughts, extreme weather, or this year's surprise, to me at least, the Mississippi becoming impassable in certain spots, the effects on families and communities are so massive that in many cases, only government has the scale to address resilience and adaptation, and the public rightly expects government to act. The next Congress should take up that work.

I want to touch on some recent policy changes that are good for the United States. It is hard to imagine a prosperous America that is not a leader in clean energy technologies across the board.

Taken together, the BIL, CHIPS, and IRA leverage the U.S. advantage in basic research, fund demonstration and deployment of cutting-edge technologies, and incentivize private investments in clean energy and manufacturing.

In 2 short years, the U.S. has fashioned a policy response to climate change that explicitly addresses the challenge posed by China

[21] Congressional Research Service (2022). Farm Bill Primer: Conservation Title. Updated January 25, 2022.

and others that currently dominate clean energy supply chains, and it puts domestic job creation at the center of what it means to be successful in the fight against climate change.

That is a win for the American people.

But the policies are one thing. We still have to convert those policies into wins for jobs and wins for reductions in emissions.

It is really important that Congress keep these policies in place so that private capital has the certainty it needs to invest in clean energy at the pace needed to bring emissions down quickly.

In the IRA, after all, the heavy lifting is done by tax cuts for investors. Dependence on potential adversaries for new energy technologies would be as risky to the United States as dependence on foreign oil.

And increasing domestic capacity to produce these items is the key strategy to reduce that risk. Please don't backtrack. We are on the road to success.

We do need to keep moving on accomplishments. Permitting reform is needed. While these policies that we have enacted can make us internationally competitive, the evidence is, they are already. Investment is pouring in. We still have work to do to make sure that they are online quickly and efficiently.

Simply put, permitting reform is critical to meeting our climate goals. Although it is an often difficult discussion, we must find ways to permit many more large-scale energy projects than we have in the past.

Trade is another important place where we need to keep making policy progress. We still face significant challenges related to our strategic competitors and international trade flows. There is a lot to be discussed here, maybe we will get to it, but perhaps the solar industry best represents the industries we face—excuse me—the issues we face.

The global solar industry is hooked on imports from China, but Chinese practices violate our trade laws. And they violate the Uyghur Forced Labor Protection Act.

We cannot blink in this situation. Clear and enforcement—consistent enforcement of our trade laws, including tariffs where appropriate, is needed to create the conditions for a domestic solar manufacturing industry, from the polysilicon on up.

Photovoltaics are poised to become an iconic, 21st century industry, and success in the clean energy economy requires that we establish a healthy, domestic solar manufacturing industry.

To conclude, it is really important to the labor movement that we realize this opportunity, not just to work on climate, but to solve other goals that we have in our economy and our society.

It is a profound opportunity to improve fairness and equity, to reverse inequality, to invest in communities that have been lacking job-creating investment for decades, or to invest where fossil fuels will no longer be produced or used.

Clean energy investments can more easily be steered to communities of color, creating opportunities with the intent to alleviate the racial disparities in economic opportunities that have plagued our nation.

The climate crisis calls for an urgent response, and this is an opportunity to create a cleaner, more prosperous nation. That is what

is before us if we are able to seize it. I want to thank the committee for its work toward that goal and for the opportunity to speak to you today.

[The statement of Mr. Markell follows:]

Written Testimony of Brad Markell

Executive Director, AFL–CIO Industrial Union Council

Before the Select Committee on the Climate Crisis

U.S. House of Representatives, 117th Congress, Second Session

Hearing on "Solving the Climate Crisis: Key Accomplishments, Additional Opportunities, and the Need for Continued Action"

December 6, 2022

Thank you Chair Castor and Ranking Member Graves for the opportunity to testify before the committee on "Solving the Climate Crisis: Key Accomplishments, Additional Opportunities, and the Need for Continued Action." This testimony is submitted on behalf of the American Federation of Labor and Congress of Industrial Organizations and the 12.5 million workers represented by its 58 affiliated unions.

The climate crisis affects working Americans in nearly every aspect of their lives, and how we as a nation respond to it will shape our lives for the foreseeable future. The challenges are many. We must succeed in becoming internationally competitive in a wide range of clean energy technologies and in creating family-supporting jobs in the United States, or we risk not just jobs, but energy security. When these jobs are created, we must be intentional in creating opportunity for everyone, and in supporting the transition of fossil-fuel linked communities with new job-creating investments.

The effects of climate change are quite evidently upon us, across the globe and in the United States, and working people and the less fortunate often bear the heaviest burden. The public's awareness that climate change is making things worse is rising, along with the recognition that the problems are so massive that only government has the scale to address them. We have to find ways to invest in mitigating the effects of climate-induced events on our citizens and our economy—be it fires, floods, droughts, extreme weather, or this year's surprise, to me at least, the Mississippi becoming impassable in spots.

We are beginning to see how investments in new technologies will reshape industries, and the impacts on workers and communities. Electricity produced from solar panels has a different economic footprint than electricity produced from coal, one that may not even be a domestic footprint. The value-chain for electric vehicles is much different than that for internal combustion vehicles. In both cases, making sure that the new jobs being created are as high-quality as the jobs that currently exist is a high priority for the labor movement and for workers in general.

The labor movement has embraced the need to help shape the nation's response to climate change, and to make sure that the needs of workers and their families are at the center of that response. In June 2022, the delegates to the AFL–CIO convention passed a far-ranging resolution titled "Climate Change, Energy, and Union Jobs." The full resolution is attached as a part of my written testimony.

The resolution is a broad road map to labor's priorities in climate and energy policies and outcomes. The call for high-quality union jobs in industries that produce and use energy, and for domestic production is prominent in the resolution. But so too is the call for investment in public infrastructure, in schools and health care, and in transportation and housing. Upgrades in these systems must be part of our response to climate change.

Recent Policy Changes Good for Climate Action and Job Creation

The work of this Congress, including the work of this committee in exploring in depth the possible policy responses to the climate crisis, has given the United States the chance to be internationally competitive in clean energy technology. The CHIPS and Science Act, the Bipartisan Infrastructure Law, and the Inflation Reduction Act all contribute to American leadership in the energy technologies of the future.

It is hard to imagine a prosperous America that is not a leader in energy technologies. Taken together, these laws leverage the U.S. advantage in research productivity and quality, fund demonstration and deployment of cutting-edge technologies, and incentivize private investment in clean energy and manufacturing. We

now have a policy environment that is up to the job of meeting the challenge of China and other competitors, who today dominate global markets for critical emerging clean energy technologies.

I want to underscore the importance of the manufacturing provisions in the Inflation Reduction Act, especially since they have been in the news recently. As technologies like renewable energy and electric vehicles gain market share, at whatever pace, demand for fossil fuels will decline, reducing economic output and employment in those industries, with many workers and communities already severely impacted.

In the clean energy economy, investment and spending that now goes to fossil fuels to power our nation will be flowing to producers and owners of solar panels, wind turbines, batteries, and so many other *manufactured* items. We can't win the clean energy economy if we don't win the manufacturing part of it.

I also want to highlight labor's support for the broad technology-neutral approach embedded in the BIL and IRA. Technologies important to labor, like carbon capture and storage, direct air capture, advanced nuclear and clean hydrogen are put on an even policy footing with other more conventional renewable technologies. These are all industries of the future, and they are all prominent in many of the scenarios that allow us to reduce emissions fast enough to avoid the worst effects of climate change.

The IRA is also notable for its promotion of job quality through the provision of a tax credit for project developers that pay at least the prevailing wage to workers constructing the project. This creates a level playing field for high-road employers, built on the sensible idea that firms receiving public support should create high-quality, family sustaining employment.

Agreements between unions and developers in the offshore wind industry show the potential of the clean energy economy to provide family sustaining jobs. Ørsted and North America's Building Trades Unions have a project labor agreement that covers all of Ørsted's offshore wind projects on the East Coast. Several other offshore wind developers have signed project labor agreements for individual projects. U.S. Wind announced that in addition to project labor agreements, it would partner with the United Steelworkers to develop a manufacturing hub at Sparrows Point in Maryland, historic and hallowed ground that was once home to the world's largest steel mill.

In two short years, the United States has fashioned a policy response to climate change that promotes technology development and incentives for private investment. It explicitly addresses the significant challenge posed by China and others that currently dominate clean energy supply chains. And it puts domestic job creation at the center of what it means to be successful in the fight against climate change.

Converting Policies to Economic Wins and Emissions Reductions

With a job friendly, climate friendly set of policies in place, it is important that Congress maintain stable policies that will allow private capital to commit to investments in clean energy projects at the pace needed to bring emissions down quickly. In the IRA, after all, much of the heavy lifting is done by tax cuts for business to invest in clean energy.

Keeping these policies in place for the rest of the decade will spur a wave of investment that promises to be a significant source of economic growth and job creation, as well as significant source of emissions reductions and American competitiveness.

The AFL–CIO and the Energy Future Initiative work together as the Labor Energy Partnership to produce policy analysis on energy and climate related topics. Our modeling of the IRA, with some small differences from what ultimately passed, show substantial employment growth, increases in disposable income, and a tripling of emission reductions between 2022 and 2030—because of the investment-inducing nature of the IRA.

The study projects that if these polices are left in place, including the domestic-content incentives, employment will be 1.46 million higher in 2030, with most of the gains in the construction and manufacturing sectors. Emissions in 2030 would be 37% below 2005 levels, while residential energy costs would drop by 1.4%. An overview is submitted as part of this testimony.

The climate-related policies in the Bipartisan Infrastructure Law are also important for investments in how we produce, transport and use energy. The investments in electric power and vehicle charging infrastructure will complement private investment in electricity production and electric vehicles induced by the IRA. The Department of Energy's investments in demonstrating new technologies, such as the recent announcement of awards in the advanced battery supply chain, are critical in spur-

ring investment in emerging technologies, in industries that will be at the center of this century's economy.

This large deployment of public resources is the proper response to the scale of the climate crisis and the competitive challenge posed by China and others. However, beyond the economic and climate benefits, these investments also reduce security risks and geo-political risks. Dependence on potential adversaries for new energy technologies would be as risky to the United States as dependence on foreign oil, and increasing domestic capacity to produce these items is the key strategy to reduce that risk. In short, the policies of the BIL and the IRA give us the tools to succeed in managing the economic and security risks of the emerging 21st century energy supply chain.

What Still Needs to be Accomplished

Permitting Reform is Needed. While these policies can make the U.S. internationally competitive and speed the deployment of clean energy technologies, we still have work to do to make sure that these investments are brought online quickly and efficiently. Simply put, this is critical to meeting our climate goals.

Although it is an often difficult discussion, we must find a way to permit many more large- scale energy projects faster than we have in the past. This is especially acute in the case of transmission for electricity, which is needed to support the growth of renewables and the electrification of transportation and buildings. Effective reform likely requires Congressional action, and additional resources, but need not compromise the quality or integrity of environmental reviews.

Trade Policy Impacts our Climate Goals. As the global clean energy economy develops, we still have significant challenges related to strategic competitors and international trade flows. How helping Europe meet its energy needs affects the domestic price and availability of natural gas remains to be seen as we head to winter. How we deal with the carbon-intensity of traded goods is a long way from being sorted out, even as the E.U. barrels toward the imposition of a Carbon Border Adjustment Mechanism, while other nations flood the world market with carbon-intense products.

And perhaps no industry illustrates the kind of trade issues we have to resolve more than the solar industry. Three times in the last decade two different U.S. presidents placed tariffs on solar products from China, and just last week the International Trade Commission found that four companies representing over half of our solar imports are circumventing those tariffs and should have significant tariffs imposed.

As solar developers suffer an acute shortage of solar panels, an unknown but significant portion of solar panels shipped to the United States have been held at the border because the importers are unable to prove that they weren't produced in part by forced labor, in violation of the Uyghur Forced Labor Protection Act.

Clear and consistent enforcement of our trade laws, including tariffs when appropriate, is needed to create the conditions for a domestic solar manufacturing industry, from the polysilicon on up. Photovoltaics are poised to become an iconic 21st century industry, and success in the clean energy economy almost certainly requires a healthy domestic solar industry.

Resilience and Adaptation Efforts Must Increase. The United States National Climate Assessment (NCA) has clearly and consistently called for more attention and investment in response to the effect of climate change. Although the Bipartisan Infrastructure Law dedicates funds for resilient infrastructure and power system upgrades, and for improvements to water systems, America is not investing at the scale needed to protect its citizens from the effects of climate change.

The NCA describes resilience and adaptation efforts as local and regional by their nature, and recommends a process that begins with local awareness and assessment. Local governments are ill-resourced to carry out much of this work, especially outside of large cities with substantial budgets. Now that we have policies that address emissions mitigation, it is time for Congress to seriously examine how we can develop and implement resilience measures. A deeper understanding of what investments and policies will and won't help citizens exposed to climate risks avoid catastrophic losses can help shape policy responses that we will need to deploy for decades.

Conclusion: We Must Solve for Multiple Goals

The changes coming to our economy as we confront the climate crisis are profound and present an opportunity not seen since the rise of the industrial economy a century ago to address the troubling trends of the past few decades. The creation of

whole new industries in whole new geographies offers the chance to reverse the crippling inequality that has become a feature of the American economy, not a bug.

We have a chance to invest in communities that have been lacking job-creating investment for decades, or where the fossil fuels will no longer be produced or used. Clean energy investments can more easily be steered to communities of color, creating opportunities and with intent to alleviate the racial disparities in economic opportunities.

The climate crisis calls for an urgent response, but presents an opportunity to right past wrongs, and to create opportunity for a cleaner, more prosperous nation. That is what is before us if we are able to seize it, and I thank the committee for its work toward that goal, and for the opportunity to speak with you today.

Additional resources:

https://laborenergy.org/wp-content/uploads/2022/08/8-6-22-IRA-Impact-Analysis-V14.pdf

https://aflcio.org/resolutions/resolution5

Ms. CASTOR. Well, thank you all very much. And many of you and your organizations have been with us from the beginning as we put out our Request for Information, crafted the policies of the Climate Crisis Action Plan, hammered them out into legislation, often bipartisan legislation. For your partnership in working alongside with us, I thank you all very much.

So now we will go to member questions, and I am going to recognize Representative Brownley first for 5 minutes.

Ms. BROWNLEY. Thank you, Madam Chair, and since this is our last hearing, sadly, I really wanted to thank you, Madam Chair, for your leadership, and your success is, I think, quite clear, certainly in the 116th Congress, the culmination of a comprehensive report on the climate crisis in the 116th, which I think, in essence, became the Biden administration's climate policy.

And then certainly as everyone has said today in the hearing, in the 117th Congress, the passing of the Bipartisan Infrastructure Bill, the Inflation Reduction Act, and certainly the CHIPS and Science Bill all are so critically important on our mission here.

And I know it took many, many, many people and much effort to move these bills forward, but you were always at the front of that negotiation, and I just really do appreciate your leadership. And I am sad—it has been an honor to really serve on this committee, and I am sad to see it—sad to see it end, but I really recognize your hard work.

My first question is to Dr. Moerman, and thank you for your testimony. And I was most interested in, at the end of your written testimony, you talked about and supported the need for the Growing Carbon Solution Act, which is a voluntary carbon trading market to incentivize our farmers, American farmers, to invest in climate friendly conservation policies.

And you said that farmers are clamoring for this, and so, you know, if you could talk about that just a little bit more. It is voluntary. Is a voluntary program going to work? Is that what farmers want, is voluntary? Or would they rather see something that is more concrete than voluntary, that, you know, takes place really across the country and through kind of all segments of agriculture?

Rev. Dr. MOERMAN. I will tell you that the feedback that we got from the farmers who we met with just last week, is, they do appreciate voluntary programs——

Ms. CASTOR. Dr. Moerman, can you speak directly into the microphone?

Dr. MOERMAN. Yes.

Ms. CASTOR. That would be helpful.

Dr. MOERMAN. How is that?

They do appreciate voluntary programs, but what they are very excited about is the opportunity, with the Growing Climate Solutions Act, is to get a fair price for sequestering carbon, enriching their soils.

And right now, without a verification system, just like we have a verification of USA Organic, USDA Certified Beef, there is not something like that for the carbon markets, and so it is the Wild West. And they are at risk of not getting a fair price for the good work that they are doing because there is just such a wide range of—there is no standard.

And that is what they are really looking for, that standardization, that certainty, that verification. And this is especially important for small- and medium-sized farmers who just don't have the resources that the big companies have to negotiate all of those contracts with private companies. And so the USDA plays a really important role of acting as that verifier and certifier.

And, again, I want to note that this is an act that has strong bipartisan support. It passed in the Senate, and we are poised where we could pass it here in the House by the end of the year.

Ms. BROWNLEY. Thank you very much. You also talked about not enough resources for conservation programs. So do you have a sense of or do you have any data really about the number of farmers who may be interested in applying for some of these conservation programs but are just not applying because they know the resources are so limited?

Rev. Dr. MOERMAN. So these conservation programs in the Farm Bill and with USDA are consistently oversubscribed, and so one that I heard consistently was the EQIP program, which, again, is a voluntary program that allows farmers to innovate and trial new things on their farm for 4 years.

And according to the Congressional Research Service, the EQIP program is only funding 27 percent of eligible program applications, so just a quarter of the applications that they get. And this is—again, we see that a backlog in all of the conservation and water programs that are available, and so it is a vast amount of farmers who want to get access but haven't been able to.

The provisions in the Inflation Reduction Act of funding these programs is a great step in the right direction, and we need to keep those gains going into the reauthorization of the Farm Bill.

Ms. BROWNLEY. Great. Thank you very much. My time is up, and I yield back.

Ms. CASTOR. Thank you.

Next up, Rep. Crenshaw, you are recognized for 5 minutes.

Mr. CRENSHAW. Thank you to the Chair and Ranking Member for holding this hearing. Thank you to the witnesses for coming. I never get to go first, so this is really exciting.

Look, we hear again and again about the devastating consequences of climate change, and we have never argued in this committee about whether or not we should address the issue and

mitigate the worst outcomes. That, we surely agree on, but we do sharply disagree on the solutions.

And, you know, the argument is made often that only renewables can be the solution. So we are told that we should pursue unreliable energy at a higher cost with severe consequences on our physical environment or else we don't care enough about climate change.

Now, the problem here is that many in the climate movement have endorsed radical environmentalism instead of rational environmentalism, endorsed an emotional approach instead of a fact-based, practical approach.

For instance, radicals will reject any measure to reduce the time it takes to build carbon-free energy we need because we need permitting and regulatory reform. Radicals endorse, somewhat ironically, unprecedented environmental devastation since, of course, the production of renewables requires far more materials and mining of rare earths, far more land to be cleared, and far more transmission lines to actually work.

And radicals reject calls to increase the domestic natural gas energy production that will reduce global emissions, because they refuse to acknowledge the fact that more U.S. natural gas on the global market means more foreign coal is displaced, which means emissions are immediately and drastically reduced.

This is radical environmentalism. It produces less energy with more resources at a higher cost. To be a radical environmentalist is to ignore goals like adaptation and innovation and, instead, pursue only prevention, which is an impossible goal. And the irony is that this misguided strategy makes the goal of preventing temperature rises even more impossible than it otherwise would have been.

Radical environmentalism is anything but compassionate, because the strategy necessarily makes our energy less reliable, which results in poverty, despair, if not outright death.

I hear a lot about environmental justice for the disfranchised, but apparently that doesn't mean justice for them now when they need energy to survive and heat their homes at a price that they can actually afford.

And in the next Congress, we will focus on solutions that actually work, solutions that deliver reliability, affordability, conservation, and a reduction in global emissions. No technology should be taken off the table, and the cost of the solutions should not be greater than the cost of the problem itself. In other words, rational environmentalism.

And, with that, I will direct my questions to Dr. Foss. Appreciate you being here. Again, good to see you. Should the tax credits in the Inflation Reduction Act be amended to require a certain threshold of reliability? Do you think that is something we should pursue?

Dr. FOSS. Wow, what an idea. As you well know, Congressman, following our freeze in February 2021 in Texas, where we have an abundance of wind-installed capacity and a fair amount of solar now, one of the ideas was to fix a problem that has been around—and it goes directly to your question.

The thought is to have the providers of wind and solar energy also execute firm contracts for backup power, so that they are prop-

erly presenting to the market and to the customer the full cost associated with the use of that energy.

And I think that actually there are probably ways of implementing this in a broader way, whether your idea or something like it. But it is of deep concern to everyone as we look at how these resources interact with grids and the challenges in managing them. And what we don't want to do is create money pits around those challenges. We don't want to be constantly spending and trying to solve problems to mitigate all of the consequences of the use of these resources.

Mr. CRENSHAW. Right. And related to that, something we have talked about in the past is energy density, right? This is an important concept when you are talking about reliability in energy grids and whatnot. Should that also play a role in determining what energy sources get to produce on Federal land?

I mean, the reason I bring it up is because, according to President Biden's 2050 emission goals and according to a Princeton study, you would have to take the equivalent of Arkansas, Iowa, Kansas, Missouri, Nebraska, and Oklahoma to generate the wind power to contribute to that.

I mean, it just seems impossible. And so when we talk about Federal land, should energy density also play a part?

Dr. FOSS. Well, I don't know about that. I would have to think about that as to how it would apply to the Federal lands point of view, but it might be part of certification. It might be something that should be implemented as a standard. I certainly think that people should be better educated so they know what we are doing and what the tradeoffs are.

Mr. CRENSHAW. Right. So fundamentally, the resources it takes to produce a unit of energy, I mean, that is what we are talking about, and it has to be part of the equation.

Thank you, and I yield back.

Ms. CASTOR. Thank you.

Next up, Rep. Bonamici, you are recognized for 5 minutes.

Ms. BONAMICI. Thank you. Thank you so much, Chair Castor. And I just want to thank you, as well as our witnesses and the Ranking Member, for the hearing today. But I want to thank you, Madam Chair, and also the Select Committee staff for your great work and tremendous leadership over the last 4 years. It really has been an honor to serve on this committee.

And I want to join my colleagues as well in conveying our deep sorrow for the loss of our colleague and friend, Congressman Don McEachin, who was a tireless advocate and, as we know, a nationally recognized leader for environmental justice. I represent a district in Oregon, and I was quite moved that in my home state of Oregon, our governor called for the flags to be flown at half-staff in Oregon to remember Representative McEachin. I urge all of us to work every day to honor his memory.

We have made meaningful progress in tackling the climate crisis, and I welcome the opportunity to continue working with my colleagues next Congress, although I have to say I am disappointed that this committee, as we know it, will not continue, because I am proud of the work that we have done with your leadership, Madam Chair.

So throughout my work on the Select Committee, as well as on my work on the Committee on Science, Space, and Technology, I found it important to emphasize science-based decisionmaking, which is not radical—it is science-based—and to improve science communication across all pillars of our policy.

We know that quality science communication can increase the understanding of how the natural world works, it improves our capacity to make informed decisions here in Congress, and it also helps our constituents and the general public understand the policies and the investments we make and why we make them.

So I want to ask you, Reverend Dr. Moerman, can you talk a little bit about why it is important for us to continue these investments to further advance our knowledge and understanding of climate modeling and natural systems, and also, how can we work to promote that communication piece, that science communication, both for the public and for scientific communities for the purpose of improving our policy decisions here on the Hill?

Rev. Dr. MOERMAN. Thank you, Congresswoman. And yeah, I just want to iterate that it is really important to continue R&D investment, basic science research investments for our incredible scientists here in the U.S. They are—we know a lot. We know a lot that we can act on.

But as Ranking Member Graves points out, there is still more that we have to discover to be able to put into place climate solutions quickly and efficiently. And so we do need more investments in science, technology, our national labs, our incredible research universities. And I am pleased to say that I got to work for 15 years with them, and as part of the Department of Energy as well, and seeing those incredible investments up front.

I think the best thing we can do, though, to honor those past investments is also to take what—this body of research that we have invested in and begin to put those recommendations into action.

Ms. BONAMICI. Absolutely. Thank you so much.

And I want to ask a question to Ms. Hill. Thank you for your testimony. Ocean and coastal ecosystems are often overlooked and undervalued—I co-chair the House Oceans Caucus—and I know that they are a tremendous resource. Our natural climate solutions—and this is something I know Dr. Moerman talked about as well—restoring coastal wetlands, protecting blue carbon ecosystems, for example, these can be an essential tool for national, state, Tribal governments to meet climate goals.

And I have been focusing on the effects of climate change on the ocean and wetlands and calling attention to the benefits of blue carbon. Why is this important from both a domestic and international perspective? And in your work, how are these nature-based projects being used for adapting and mitigating effects? And why is it important for this international collaboration?

I mean, the way I look at it is the ocean covers most of the planet, and if the ocean is not healthy, the planet is not healthy. So how does that intersect with your work on the Council?

Ms. HILL. Well, thank you for the question, and thank you for your focus on oceans. Absolutely, oceans are critical to human life, and they are critical for protein for over a billion people across the globe. Our fisheries are changing as a result of climate change.

Coral reefs are dying and fish are moving out of areas, so that some nations are more harmed than others.

This is an international issue. It creates security risks for the United States in that we will see unprecedented numbers of people on the move as a result of climate impacts: heat, changes to our oceans, more extreme events.

It also deeply affects the United States. We have two long coasts, and they are part of the economic engine of this country. And to have those coasts battered by more extreme storms, sea level rise, saltwater inundation, the loss of natural wetlands, we are making ourselves highly economically vulnerable. And then we will also see communities forced to leave and find new homes in new areas, at great cost to themselves and to other Americans across the nation who need to support those moves. So focusing on our oceans is critical.

Ms. BONAMICI. Thank you. And I see my time is expired. Thank you for your response.

I yield back. Thank you, Madam Chair.

Ms. CASTOR. Next up, Mr. Palmer, you are recognized for 5 minutes.

Mr. PALMER. Thank you, Madam Chairman. And I will associate myself with the comments about our friend, Mr. McEachin. He was a real gentleman and a serious legislator. He will be missed, especially by his constituents.

Ms. Hill, you talked about golf ball-sized hail and that that is an example of extreme weather. Would you consider 8-inch diameter hail an example of extreme weather? If you think golf ball, that size is, an 8-inch would be a greater example, I would assume?

Ms. HILL. [Inaudible.]

Mr. PALMER. Yeah.

Well, I just want to——

Ms. HILL [continuing]. New trends——

Mr. PALMER. I just want to point out that 130 years ago today, in Texas, The New York Times reported 8-inch diameter hail. So that was pretty extreme.

And you also made this point about people need to just look out their window, as though that, looking out your window, would be some evidence of climate change. I would say there are people in certain parts of the country this winter that will be looking out their window, thinking about cutting down the trees as a source for heat for their homes because they can't afford their heating bills.

We are headed toward a crisis in regard to people being able to afford energy, and it is impacting everything. I mean, it is not just heating your home or filling your tank. It is being able to buy groceries.

I have got numerous personal stories here from, everything from CNN to The New York Post, of people, one in particular, this lady in Philadelphia who works for Philadelphia's Heater Hotline said that as inflation has pushed up her food budget and other expenses, she is bundling up and keeping the heat turned down, hoping to stretch her heating oil for as long as possible. She said it is miserable, it is like living in an igloo.

These are all, I think, directly the result of this administration's energy policy.

Here is a guy named Tim Wisely. He says he is keeping it at 50 to 55 degrees in his home. Now, he is older. He said he can't go food shopping and still be able to pay for oil, it is one or the other.

And one of the things—and I have expressed this multiple times in this committee—is my concern about excess winter deaths and the impact that it is going to have. We have seen it in Europe. Now, there are people who want to deny that. They are excess winter death deniers. That is going to be a problem.

This gentleman that I just mentioned, 67 years old, his wife just died, he is living by himself. And you are going to literally have people that are going to have to choose between heating their homes and buying food or buying medicine. And it is a particular concern for people who have cardiovascular issues, respiratory disease, other preexisting conditions. It is a problem for infants, that the policies of this administration are impacting in a very negative way.

Now, I admit the climate is changing. All you got to do, instead of looking out your window, is read the geologic history of the world to know that the climate is changing. But there are also things that are impacting energy production, such as what we have seen in Europe, that has gone on last year and again this year with falling wind speeds.

It requires that the wind speed be at least 11 miles per hour to generate power. It really needs it to be about 15 miles per hour. And when it falls off, you don't get the power generation, and the prices go through the roof.

These are some of the things that I think we have to take into account when we are considering these policies and the rush to renewables, which they have already been proven unreliable because they don't provide the consistent baseload that the grid requires, whether you are in the United States or in Europe, is a problem.

I think that these are some of the issues that we have to take into account, in addition to some of the things that were mentioned by my colleague, Mr. Crenshaw, in terms of power. I have had numerous discussions about I think the best way for us to reduce emissions is to go to next-generation nuclear.

You can site a next-generation nuclear facility on 640 acres. That is 1 square mile. To get the same power generation that you would get from a next-generation nuclear facility would require 77,000 acres for a turbine farm. That is an ecological disaster, not to mention the mining that would be required to provide the critical minerals for that.

So I just think—and, again, I appreciate the opportunity to serve on the committee and to present these perspectives. I do think there is more work to be done. And I appreciate the opportunity to serve with you on the committee, Chairman Castor. I yield back.

Ms. CASTOR. Thank you, Rep. Palmer.

Next up, Rep. Huffman, you are recognized for 5 minutes.

Mr. HUFFMAN. Thank you, Madam Chair, and I want to thank the witnesses as well. It has been a good conversation.

So I am sitting next to an empty place on the dais, and a beautiful arrangement of flowers, that is a fitting tribute to our dear friend, Don McEachin, who we all miss very much.

But I want to suggest that an even more fitting tribute to our friend Don, if we love him as much as we say we do, would be to make sure that this week we do not allow the EJ community to be thrown under the bus. We are going to be asked to do that as part of a false choice that suggests that the only way you can have clean energy transmission is to have the biggest rollback of the Clean Water Act in 50 years, to cut the EJ community out of meaningful input in the public process, and to green light a whole bunch of terrible, polluting fossil fuel projects.

We should not do that. We should not do that because it is not the best way to meet our clean energy goals. We should certainly not do it in a dirty deal that is mostly about fossil fuel.

So, I just want to suggest there is a better way, and we will have a chance to do that, I think, on the floor this week.

But, Madam Chair, thanks to you and your staff for these past several years of just doing a great job. It has been a historic year on climate action. Your leadership has helped focus, I think, the country and the world on the climate crisis, its impact on communities, from our lands to the ocean.

And we have also, through this committee, done a good job of calling out the fake solutions that are very much part of our challenge as we confront this crisis. We are going to continue to be invited by the fossil fuel industry to pursue fake solutions. We have had a chance to talk very substantively about that.

This committee has made clear that the climate crisis is real, and we have approached it with the urgency that it demands. I am really proud of that.

This year, I have been pushing for the need to reform international financial institutions so that we can promote clean energy, not just here but in countries around the world. That is a very important piece of unfinished business.

I have also been highlighting the climate and environmental injustices caused by plastics. As we transition to clean energy for our power sector and our transportation, we need to be prepared for the fossil fuel industry's plan B, which is to push plastics as the next great way to keep us addicted to these planet-killing fossil fuels.

But I celebrate all of the achievements that we have been able to notch in this Congress. And as we prepare to hand the majority to our Republican friends, I think we just need to be resolved to continue to point out what, unfortunately, are some pretty major differences.

We are going to see this Select Committee eliminated right away by our Republican colleagues, and that is really too bad, because I think it shows that, as much as they have pivoted from outright climate denial, we still see a stubborn refusal to acknowledge this as the crisis that it is. It deserves a Select Committee focused on decarbonization and the transition to clean energy, and, unfortunately, under the Republican majority, we are not going to get it.

I am also very concerned about the fake solutions that we probably are going to hear way too much about in the years ahead. We don't have time for that. And just as the tobacco industry offered us things like filtered cigarettes when the science became totally clear that smoking cigarettes was killing people, we now hear the

fossil fuel industry and their allies here in Congress offering us essentially filtered cigarettes, fossil fuel that somehow here in the U.S. is a little bit less planet-killing than what the Russians put on the market. But it is still killing the planet. We don't have time for fake solutions. We don't have time for filtered cigarettes.

And finally, we need to really make sure that we are taking environmental justice seriously, I believe, going forward, because we are going to hear fake equity arguments as well. We have heard time and again in this committee how fossil fuel is actually a great thing for poor people and for disadvantaged communities and we just need to push more natural gas through projects like the Mountain Valley Pipeline into impoverished areas. We need to listen to the actual frontline communities, not the Astroturf folks that the industry puts forward from time to time.

And so starting with that point, I want to go to Ms. Johnson. Ms. Johnson, I am really glad that you brought up the fact that we put a billion dollars in the Inflation Reduction Act to streamline transmission and environmental permitting. We all want to see this clean energy deployed as fast as possible.

But I want to know, in the limited time I have left, if you would agree with me that we ought to give that process and maybe the principles you and your EJ colleagues are working on, which sounded very promising, a chance to work before we gut NEPA and the Clean Water Act in the name of clean energy?

Ms. JOHNSON. Yes, 100 percent agree with you. We just passed those investments. And as you said, we need to give them opportunity to come into fruition, to be implemented, while we also simultaneously work to make reforms and changes to our permitting process so that we are able to quickly deploy renewable energy. I believe that we can do this with a both/and strategy.

Mr. HUFFMAN. Thank you.

And my time is expired, but Madam Chair, I hope I can enter two things into the record. The first is an article in the publication from the Institute for Energy Economics and Financial Analysis entitled "Carbon capture remains a risky investment for achieving decarbonization." The second was an op-ed that appeared in August of this year in The New York Times from someone who spent his career in the carbon capture and storage industry and now calls it a scam. The title is "Every Dollar Spent on This Climate Technology is a Waste." Again, both very important to our consideration of fake climate solutions which we don't have time for.

Ms. CASTOR. Without objection.

[The information follows:]

Submissions for the Record

Representative Jared Huffman
Select Committee on the Climate Crisis

December 6, 2022

ATTACHMENT: Robertson, B., "Carbon capture remains a risky investment for achieving decarbonization," Institute for Energy Economics and Financial Analysis, September 9, 2022.

This study is retained in committee files and available at:
https://ieefa.org/resources/carbon-capture-remains-risky-investment-achieving-decarbonisation

ATTACHMENT: Harvey, C. and House, K., "Every Dollar Spent on This Climate Technology Is a Waste," *The New York Times,* August 16, 2022.

This opinion piece is retained in committee files and available at: https://www.nytimes.com/2022/08/16/opinion/climate-inflation-reduction-act.html

Ms. CASTOR. Mr. Armstrong, you are recognized for 5 minutes.

Mr. ARMSTRONG. Thank you, Madam Chair.

I think it is important to reframe a little bit on today's hearing. I don't think the last 2 years have been filled with accomplishments. They have been filled with numerous self-inflicted crises that have made energy more expensive and supply chains more vulnerable.

Since January of 2021, President Biden and this administration have canceled the Keystone XL Pipeline, issued a moratorium on oil and gas leasing on public lands, pushed radical environmental justice policies that call for the elimination of fossil fuels and baseload power generation, withdrawn documents that provide clarity and streamline the regulatory process, disincentivized the use of natural gas appliances, pushed for billions in tax increases on domestic energy producers, and proposed changes to make it next to impossible to upgrade existing pipeline infrastructure.

And that is only a few of the actions taken by this administration that make it harder to domestically produce the energy and raw materials required for daily life.

Despite spending trillions of dollars on Green New Deal programs, far too many Democrats refuse to answer the most fundamental questions about where we are going to obtain the components for their fundamental reworking of the American economy.

The administration is pushing for 30 gigawatts of offshore wind to be deployed within the next 8 years. How are we going to source all of the raw materials for thousands of turbines without turning to our global adversaries?

Democrats are pushing for economywide electrification through new standards and requirements. How are we going to handle the grid upgrades required for an unprecedented increase in electricity consumption? There is already a year-long supply chain backlog for essential components like transformers.

The majority provided billions through the Inflation Reduction Act for new taxpayer-funded incentives for electrical vehicle purchases. Where are the components going to come from? Automakers have already raised issues with compliance because we don't have the necessary supply chains.

And now, when attempting to develop supply chains after the fact, the Department of Energy announced it will provide $200 million to a company whose operations are based in China.

Dr. Foss, in your testimony, you noted the important distinction between political timeframes and the reality of existing timeframes. This difference is something I have repeatedly mentioned because there is a substantial disconnect between the policies supported and the realities of the world.

All parts of the value chain from raw materials—raw material development to infrastructure build out take a significant amount of time to develop. Many of the bills pushed by the majority are

not sequenced correctly and would create a rush for materials that threaten our economic and national security.

Can you expand on statements you have made supporting the pursuit of a materials-first approach to policymaking and the importance of first supporting high-integrity supply chains?

Dr. FOSS. Sure. I think, first of all, it is a recognition of what we are willing to do in the United States, and how to change that, to persuade people, alter our attitudes or, you know, whatever the case may be. The reality is that the timeframes—the supply chain timeframes are political timeframes, because by the time we work through reviews, all of which are justified—there are legitimate concerns about large-scale projects, I get that, everybody understands it. We try to work through all of those as fast as we can, and yet on average, it is a 16-year lead time before you actually are bringing material into the market. Globally, it is about the same.

So trying to get end products into markets within the timeframes that are specified in legislation, if you can't deliver, means that all you are doing is wasting really valuable resources, taxpayer resources. So that is the concern.

In terms of improving sequencing and putting materials first, it is a recognition of that fact. So if you need to do something in the legislation to address it or something in policymaking to address it, it is spending the time to get those foundational tools in place first and then proceeding with the goals and objectives that you are after.

Mr. ARMSTRONG. Does the recent establishment of the state-owned conglomerate China Rare Earth Group impact U.S.-focused, materials-first supply chain?

Dr. FOSS. Oh, hugely. We are doing a review of that right now. This was a major shift in how things are done. They have consolidated a number of their rare earth enterprises into this very large-scale monopoly. China is roughly 80 percent of the rare earth market. They process 100 percent of our own production.

Rare earth elements are not a huge part of our nonfuel minerals tonnage, but they are critical because of the properties they have. And by doing what they are doing, what the Chinese can do is basically set the terms of the game. And we are quite concerned about that.

Mr. ARMSTRONG. Thank you, and I yield back.

Ms. CASTOR. Next, Rep. Escobar, you are recognized for 5 minutes.

Ms. ESCOBAR. Thank you so much, Madam Chair. And I want to thank all of our panelists for taking time to be with us today and for all of your great work.

Madam Chair, I want to also recognize you and your wonderful leadership. You have steered this ship in such a wonderful way, so inclusive and thoughtful, and I really appreciate your leadership. I have learned so much from it.

I want to thank all of my colleagues. I have learned so much from each and every one of you.

I know we will all miss Mr. McEachin. It is still hard to understand that he is gone, but he made such an impact on all of us.

And I want to thank the advocates watching at home. Your advocacy really helped push this Congress in a powerful way. What we saw over the last 2 years in terms of what we delivered as a result of your work is undeniable, and it is stunning to me that there are folks who refuse to acknowledge the good work.

But anyhow, it has been incredible. And I think there are enumerable opportunities ahead, and I would like to encourage all of our advocates to please not stop pushing on us, not stop holding us accountable, and please continue to use your voices because there is still so much work to do.

I represent a community in the Chihuahuan Desert, El Paso, Texas, right on the Rio Grande. And I recently held some really fantastic conversations with agricultural leaders in the community, with county leaders, with leadership from the International Boundary and Water Commission, as well as leadership from the USDA, to talk about the impact that drought has had on the river and then the subsequent impact that that has on our farmers.

We also have regular meetings with our local governments who see what happens when, after severe drought, we get intense rain, and the runoff that happens, and the incredible damage. And for an economically disadvantaged community like El Paso, those costs are catastrophic on a local community.

And so, Ms. Johnson, I would like to ask you, especially given your work in environmental justice, what are some of the, do you think, the key aspects of the climate bill, the Inflation Reduction Act that we passed, and potentially also the Bipartisan Infrastructure Law that we passed, that could help economically disadvantaged communities like mine the most? And what are some areas where you think Congress has a whole lot more work to do ahead in order to ensure that we build on the good work that we created in the 117th?

Ms. JOHNSON. Sure. Thank you so much for the question. I think that you and your colleagues did an amazing job of pulling together 700 recommendations, policy recommendations, for addressing climate and environmental justice. We see those investments being in air pollution broadly in schools, we see it in emission reductions in the transportation sector, at ports and with clean and heavy duty vehicles.

You have made available resources for technical support for frontline groups and others to really get involved in the process of making decisions about climate policy implementation and investment implementation in their communities, and that is quite important.

I think one of the ways that you have also made impact to address the questions around affordability issues is that you have increased funding for programs like LIHEAP, from $3.8 billion to $4 billion, and I think that that will be an important bridge for individuals as we transition our grid and our energy economy.

And I think, as I noted earlier, the work to ensure that we expand transmission opportunities for renewable energy in a way that is respectful and honoring of communities will be vitally important. Communities have to be at the table, communities need to have a substantive environmental assessment, and communities need legal recourse when things don't go as designed.

And so I think that as you think about, you know, permitting, as you think about transmission, if you keep these things in mind, that will be vitally important.

Ms. ESCOBAR. Thank you so much.

Madam Chair, I yield back.

Ms. CASTOR. Next, Ranking Member Graves, you are recognized for 5 minutes.

Mr. GRAVES. Thank you, Madam Chair. Thank you.

I want to make a few notes. At our hearing we had in September—I am sitting here listening to everyone celebrating the emissions reductions and the successes of the IRA, ARA, IIJA, and other laws that have been enacted in the last year or so.

In the September hearing, it was noted that 80 percent—80 percent of the emissions reductions were dependent upon a near doubling of the transmission of the electrical grid—a near doubling—an achievement that, let me be crystal clear, will not be achieved, or a goal that will not be achieved.

Number two, at that same hearing, a witness testified that approximately two-thirds of the emissions reductions that were cataloged by the EIA were actually projects that were already in the queue, so projects that were already going to move forward. So taking credit for two-thirds of the emissions that were being captured in that legislation in the IRA, these are projects that were already in the pipeline.

So, look, I think it is really important, and actually, last note, my friend, Mr. Huffman, was talking about how legislation on the table right now, specifically Senator Manchin's permitting reform, is going to gut NEPA and the environment and all these things. One, I assure you, that whoever wrote that hasn't actually been through the permitting process, because that legislation is going to do very little, and I think it is evidenced by the fact that the legislation has three tiers.

The first tier is, is it supposedly reforms the regulatory process.

Number two is it actually sets aside 25 projects that have an expedited process through the regulatory framework. Well, if you fixed it in the first one, why would you need to expedite it in the second one? It doesn't make sense.

And then third tier in there is he actually just exempts the Mountain Valley Pipeline Project from the regulatory regime that was then improved and then the expedited. So if it is not good enough for Senator Manchin, if it is not good enough for the Mountain Valley Pipeline, why is it good enough for anybody else?

So I am going to say again, Mr. Huffman, that I assure you that folks who are truly looking for regulatory or permitting reform will be back to the table because this isn't going to solve any problems that are relevant.

Doctor—I want to make note, your maiden name, Michot, which, of course, is a Louisiana name, and your former Senate—President in Louisiana just sent me a text a little while ago. I understand you are cousins, as I suspected, but great to have you with us.

Now, all of these strategies to push us in a direction of cleaner energy and renewable energy and lower emissions, they seem to be based on picking technological winners and losers; meaning, taking options off the table. I made note earlier of a solution that was

taken off the table under this law that would have saved 218 million tons of emissions—would have saved it, would have resulted in the reductions.

Can you share perspective on your thoughts on how many of these laws are focusing on technology, and even biasing technology to the point to where they wouldn't be remotely economic or affordable without the subsidies, how that plays out long-term as opposed to a strategy that would target emissions reduction?

Dr. FOSS. Okay. Trying to give you short answers on this. First of all, let's correct the record. The word "renewable" is not the right word to describe wind or solar or batteries, for that matter. The only way that we are able to use those technologies is with non-renewable materials.

A lot of them, as I pointed out, it is the inverse relationship when it comes to energy density. So whether we are getting emissions reductions, to me, is an open question. All we are doing is shifting emissions around, because the producers of the components we need aren't subject to the same protocols and the same standards and scrutiny that we are, and this is a fundamental dilemma in the conversation, the global conversation today.

And I think even John Kerry has pointed this out, emissions matter no matter where they are produced. And if by accelerating the introduction of technology that creates emissions, especially because it is more materials intense, which by default means more emissions are created, are we really accomplishing what all of you hoped to accomplish? It is very unclear.

And one of the real dilemmas in all of this is, by giving up the benefits of the fossil fuels we are pushing out of the picture, trading off that energy density, we are actually making ourselves worse off. This is a fair question. It is something that needs to be discussed if we are——

Mr. GRAVES. And, Dr. Foss, I apologize, I am out of time, and we have got votes going on, so I want to cut it off. But I just want to, in closing, just make note that based on what you are saying, if renewable energy like wind and solar is truly renewable, then so is oil and gas.

Dr. FOSS. Pretty much.

Mr. GRAVES. In most cases, you are extracting minerals.

I yield back, Madam Chair.

Ms. CASTOR. Rep. Casten, you are recognized for 5 minutes.

Mr. CASTEN. Thank you so much, Madam Chair. Thank you to our witnesses. Thank you to the staff, for everybody. This has been just a remarkable 4 years of work, and I think history will look favorably on us.

I also want to say something that has never been said in 4 years on this committee, but I want to close with it. I agree with the Ranking Member's opening remarks, and specifically when he said that we have to manage for a resource-constrained future.

When we were in Sharm El-Sheikh, one of the many interesting conversations we had at the last COP was that if you look at all of the money that the world needs to spend to adapt to a changing planet, whether it is the levees in Mr. Graves' district or investments in Egypt to make sure that the Nile still flows to the people who need it, and all the money we have to invest in mitigation to

decarbonize the world, that exceeds all of the money in all of the governments in the world.

Mr. Graves is right. We have to manage for a resource-constrained future, and these are horrible choices. The silver lining against that—and I want to come to you, Ms. Hill, with a question in a moment—is that the amount of money required is vastly less than the total amount of money in the world.

The beauty of the Inflation Reduction Act was that we pulled private capital along. We didn't assume that you only do this with public dollars.

And the way we are going to get there, it is somewhat easier for mitigation; you can make money by building a solar panel that displaces the more expensive energy source. It is a little harder with adaptation but not impossible. But we can do it.

And I think the challenge that we have politically is that politics always favors the haves. As Mr. McEachin always liked to remind us, right? It is, you know, investments in labor productivity are good for consumers, good for the economy, and they are not always great for workers, as I think you know, Mr. Markell.

Investments in energy productivity are always great for consumers and are not always great for energy producers. And what was—what is as true in Iran as it is in Appalachia is when you subsidize the hell out of fossil fuel extraction, it is really hard to bring capital in to invest in clean energy.

And so—and as you mentioned—I mention you, Ms. Hill, because you talked about property insurance markets. How do we make sure that we don't distort those capital markets to bring capital forward? How do we make sure that we are investing in the right things, the necessary things, the efficient things, the hard choices Mr. Graves talked about, and how do we make sure that we do that not as quickly as possible but as quickly as the science demands?

So any thoughts you have about how to make sure that, as we move forward to embrace cleaner, cheaper, more affordable, more reliable energy, how do we make sure that we bring private markets along and don't hold them back?

And if you have any thoughts, and if we have time, would welcome any other just thoughts on the committee.

Ms. HILL. Well, thank you for the question. It is a key question because there is not enough money for any government to handle all of the economic costs that come with climate change impacts, the damage as well as the transition. So we do need to identify ways for capital to be involved in this.

I think that one way that could spur this is greater attention from the capital markets regarding the risks that are ahead. The SEC regulation would drive greater focus on that to make sure that it is appreciated, and that will provide opportunities for investment as we are understanding what is ahead.

I also think we need to make data available as a public good so that the risks are understood.

And then I think the government should be looking at ways to enhance efforts in the private market, such as providing incentives, guarantees to underwrite the kinds of investments that we will need.

We have seen some of that in the Inflation Reduction Act, but as you point out, it is very difficult in the adaptation sphere to find that money. But I think if we identified the biggest projects that the United States needs to undertake, we could explore how we will have public-private partnerships and attract the kind of capital that we need to build those kinds of investments to protect us going forward.

Mr. CASTEN. Yeah, Mr.—go ahead.

Mr. WETSTONE. Thanks. I just want to add that there is an important proposal pending at the SEC on sustainability information, climate disclosure. That kind of thing can help direct investment in the right way.

It is really important to keep in mind that the Inflation Reduction Act really is all about incentives, leveraging private capital. It is not a regulatory program. And it is really a testament to the cost effectiveness of renewable technologies that we can achieve so much progress toward climate solutions without a regulatory program. And I think those incentives are going to get us off to a very good start.

Mr. CASTEN. I appreciate that. And I see we are out of time, but, you know, as I have said many times, many of your members, Mr. Wetstone, are trading at price earnings multiples that are a factor of ten higher than some of our major oil companies.

And if everybody was abandoning Coke for Pepsi, Coke would change their formula, change their price. They wouldn't call up grocery stores and say, you damn woke capitalists aren't promoting our product that no one wants to buy. And I think we need to be sensitive to that pushback and not get in the way of capital markets.

Thank you so much. I yield back.

Ms. CASTOR. Mr. Carter, you are recognized for 5 minutes.

Mr. CARTER. Thank you, Madam Chair.

And let me begin by echoing the comments that have been made by my colleagues earlier regarding Representative McEachin. And I too want to send my thoughts and prayers to the family. And it was an honor to serve with such a great Member of Congress.

And, Madam Chair, if I may, I want to thank you and members of this committee for this work that has been done on this committee, and, you know, not the least of which has been the education that all of us have received.

I know my colleagues certainly leave with the understanding that Georgia is the number one forestry state in the country, and that is important for them to remember. So I appreciate that opportunity to share that one last time.

Dr. Foss, I want to ask you, you know, some of the legislation that has been passed recently, including the Inflation Reduction Act, that has tried to encourage the adoption of electric vehicles in a way that hasn't fully addressed some of the underlying issues with supply chains.

For instance, the tax credits for electric vehicles that were drafted in the IRA required critical mineral sourcing in North America. And while we all agree with that and we all want that ideally, even the manufacturers have indicated that that is just not going to be possible, and it is going to be a problem.

Even our ally, France—President Macron was here last week—indicated that to President Biden as well, that it is a problem. And, you know, and there was a witness that we had in a hearing in September that indicated that the EV tax credit in the IRA would have almost no impact on EV market uptake.

So, you know, it just appears that the adoption—or I should say the goal of trying to increase the adoption of EVs in the U.S. and onshore manufacturing is a good goal, but it is not being approached in the right way. And we may fail on both of those because of that.

For instance, if I could use the example, the largest investment, the largest economic development project in the history of the State of Georgia was just announced earlier in August, in my district, right, right after this legislation was passed, and that was Hyundai investing billions of dollars, over $5.5 billion in an EV factory in my district, in the First Congressional District, that is now jeopardized by the fact that they were not included in the tax credits because of the fact that it will be a couple of years before they are able to manufacture these cars in the United States.

They can't use the ones that they are manufacturing overseas right now, even though they are our ally. And, again, this is something that President Macron mentioned in his visit with President Biden last week.

So I just want to ask you, do you think that, particularly in the IRA, could we have worked with our allies more proactively ahead of time to ensure some kind of long-term sustainability of our supply chain?

Dr. FOSS. I think you could have. I don't think it would have met your political timeline because those things take a while to hash out. I think we need to give some credit to the auto industry because they are pointing out some of the dilemmas. They are trying themselves to actually rebuild their supply chains. But admittedly, this is not going to fit within any one of your, you know, your goals in terms of when you would like to see these things happen. And you will simply have unclaimed credits. That, you know, is the reality of it.

Mr. CARTER. Thank you for mentioning that, because the timeframe that you just mentioned is extremely important. This legislation did not go through regular order. It was not vetted as it should have been had it gone through the committee process, and that is one of the biggest problems.

I have only got a minute left, so I want to really jump quickly into nuclear power because I know that you have been an advocate for this and you have spoken on it in previous testimony.

We are, in the State of Georgia, we have the only two reactors under construction, and they are about to go online at Plant Vogtle. And this is going to generate close to $25 billion in economic development and employ over 7,000 workers.

Can you talk about the—what do you feel like is keeping nuclear power from being a larger part of our energy mix? I mean, after all, we all know that it offers us clean, reliable, baseload power.

Dr. FOSS. If I was going to make a recommendation to Congress for something that you all could do beyond this Select Committee, it would be to revisit the Nuclear Regulatory Commission, how the NRC functions, how it licenses.

We have really exciting innovations that are happening on the nuclear front, but the NRC process is not a comfortable one for those.

Mr. CARTER. Good. Thank you for that.

And I am out of time, and I will yield back.

Mr. LEVIN [presiding]. Thank you all.

I recognize myself for 5 minutes.

I want to begin by expressing my profound appreciation to Chair Castor, to the entire Sselect Committee staff, for their exceptional work over the past 4 years.

This committee has played a crucial role in ensuring this Congress centers the climate crisis in everything we do. And thanks to the roadmap that we provided through our 2020 majority staff report, this Congress has been the most consequential in our history in terms of climate action.

We shaped and passed transformational policy through the Bipartisan Infrastructure Law, CHIPS and Science Act, and the Inflation Reduction Act. It will not only help reduce greenhouse gas emissions, but also grow our domestic manufacturing sector, reduce energy costs, and create good-paying union jobs.

We know that clean energy is the future. And by making these investments in climate action, we are not just doing what is needed to protect the health of our planet, but we are also ensuring the United States of America outcompetes countries like China when it comes to the clean energy economy of the future. So while we have made significant progress, I also know that we as a nation have so much more work to do.

I was honored when the Speaker named me to the Select Committee because the climate crisis is personal to me. I am the proud dad of two great young children. And I constantly think about the world we are going to leave behind for them and for their children. It is the reason I first ran for office, to make the world a safer, healthier place for them. I know the health of our planet weighs on many young people, just like my kids, just as it does on their parents.

In my district, we are seeing record-breaking temperatures year after year. Kids in our communities are experiencing year-round wildfires that threaten to destroy their homes. Just this year, the Laguna Niguel wildfire burned over 200 acres and destroyed at least 20 homes. These same wildfires also dictate how much time kids can spend outside due to air quality concerns, further impacting their everyday life.

In my district, kids are also seeing rising sea levels and coastal bluffs that are eroding and have tragically taken lives. We are facing year-round droughts that threaten basic access to clean, drinkable water. And we are confronted with the reality that it will be increasingly difficult to secure reliable water in the years ahead.

This is the result of decades of neglect to protect our planet and a lack of recognition of the impacts of our ongoing climate crisis. When I voted to pass the historic Inflation Reduction Act earlier

this year, of which many of the provisions came directly from the Select Committee's work, I knew I wasn't just voting for the biggest investment in climate action in U.S. history. I knew I was voting to create a better world for my kids and for future generations.

And while I am incredibly proud of the work we have done together and the way that this Congress has finally started investing in climate action at a scale matching the challenge that science demands, I am gravely disappointed that Republicans plan to disband this Select Committee.

While my friends across the aisle and I often have significant policy disagreements on the best way to protect our planet and grow our clean energy economy, I don't believe that is why they are disbanding the committee. They are choosing the politically expedient option by burying their heads in the sand rather than doing the hard work of proposing policy solutions, working with us to actually tackle the issues with the urgency required. And many, if not all, of my colleagues on the other side of the aisle represent communities that have been devastated, devastated by the impacts of the climate crisis, from record-breaking hurricanes and flooding to lethal heat waves, wildfires and drought. The communities they serve, just like the ones I serve, desperately need this committee to continue its work.

So instead of simply disbanding the committee because of the political optics, I offer my friends across the aisle an alternative: keep the committee, continue our work. And if you don't like the term "climate crisis," call it whatever you want, literally, whatever is most applicable, whatever you decide, whatever you like. But the hearings we have held in this committee, the policy goals that we have outlined, the work that we have done, enacting over 300 of our recommendations, and the remaining recommendations we have yet to enact are all too important to ignore and put to the side for the next 2 years or, worse even, take steps back.

There is no other committee in Congress that has such a comprehensive and crosscutting purview to ensure that climate is considered in all that we do. I urge my friends on the other side of the aisle to reconsider. We must continue to center climate action and advance our clean energy economy. There is simply too much at stake for our planet and the people we are here to serve.

And, with that, we will recess until Chair Castor gets back. Thank you.

[Recess.]

Ms. CASTOR [presiding]. The committee will come back to order.

It is one thing about the climate crisis, it really makes you hustle, doesn't it?

Thank you all very much, and thank you to the witnesses. I will recognize myself for 5 minutes, and I think I will use the time also to close out as well.

Well, thank you all. You all have marched with us every step of the way, and we are going to need your help and partnership moving on.

Greg, thank you very much for kind of framing it in your testimony by recognizing that the Select Committee on the Climate Crisis kind of defined climate policy for the country prior to Speaker Pelosi's vision in bringing us together. There were all sorts of

strands of protest, concern, whether it was in health, in environmental justice, clean energy, and then from the labor movement. And what we really envisioned happening was bringing everyone together and building the coalition necessary for the most ambitious climate action in the history of the Congress. And with your help, we were able to deliver.

Cleaner energy is cheaper energy, and as the world's top scientists tell us, we are running out of time to get this done. So it is with all of your encouragement and partnership that we were able to weave our Climate Crisis Action Plan together.

And for Ms. Johnson, you know, very early on we understood that there are many of our fellow Americans who are bearing a disproportionate burden of pollution, of hotter days, of higher bills, and that we have got to focus a lot of the solutions on communities that need to be lifted up. And fortunately, we have a labor movement also, and the workers had to see themselves, had to see a future that was going to be able to provide a future that—where they could provide for their families.

And I want to thank Speaker Pelosi for her vision, to all of the climate champions who served here, to the bipartisan work across the Congress, to my Republican colleagues, although every once in a while they made me feel like Jennifer Lawrence or Leonardo DiCaprio in Don't Look Up, because we kept saying, we have to do work now, we have to act now, we have to answer the call to action.

And we were blessed with a talented, professional staff. And if you are a current staffer on the Select Committee or a former staffer or an intern, would you please stand up so that we can give you a round of applause?

[Applause.]

You know, I have been around here long enough to know that kind of the daily grind in the Congress sometimes can wear on you. And you just hope that you look back on your days in service here, your public service, and be able to say, you know what, I really—I really made a difference, and the members listened to me and we were able to build a coalition for action. And when you look at this historic, this historic two terms, the 116th, but especially the 117th, in partnership with the Biden-Harris administration and all of the climate advocates there, it does give you hope for the future.

I want to thank you all for recognizing our accomplishments, but detailing out what we have to do: a national adaptation plan to address the risks; building a more reliable macro grid and getting clean energy out across the country; the risks of fossil fuel pollution and how that is wearing on us; and making sure we build the capacity in communities, frontline and fenceline, to make sure that those resources that we have passed in this Congress get to the families and communities that should come first; and that workers continue to lift up, no matter if they are building the clean cars or trucks or the grid or the offshore wind farms, that we do it in a way where we are not just building American and buying American, but it becomes part of the American way of life, a cleaner, healthier, more just and resilient America.

That was our aim, and I want to thank you all for making it happen. Thank you.

We are adjourned.

[Whereupon, at 3:12 p.m., the committee was adjourned.]

[Applause.]

○