S. HRG. 118–639

TAX INCENTIVES IN THE INFLATION REDUCTION ACT: JOBS AND INVESTMENT IN ENERGY COMMUNITIES

HEARING

BEFORE THE

COMMITTEE ON FINANCE
UNITED STATES SENATE

ONE HUNDRED EIGHTEENTH CONGRESS

FIRST SESSION

MAY 18, 2023

Printed for the use of the Committee on Finance

U.S. GOVERNMENT PUBLISHING OFFICE

60–342—PDF WASHINGTON : 2025

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TAX INCENTIVES IN THE INFLATION REDUCTION ACT: JOBS AND INVESTMENT IN ENERGY COMMUNITIES

THURSDAY, MAY 18, 2023

U.S. SENATE,
COMMITTEE ON FINANCE,
Washington, DC.

The hearing was convened, pursuant to notice, at 10:20 a.m., in Room SD–215, Dirksen Senate Office Building, Hon. Ron Wyden (chairman of the committee) presiding.

Present: Senators Stabenow, Cantwell, Menendez, Carper, Cardin, Brown, Bennet, Casey, Whitehouse, Cortez Masto, Warren, Crapo, Thune, Cassidy, Lankford, Young, Barrasso, Johnson, Tillis, and Blackburn.

Also present: Democratic staff: Alice Lin, Senior Tax Policy Advisor; Sarah Schaefer, Chief Tax Advisor; Joshua Sheinkman, Staff Director; and Tiffany Smith, Deputy Staff Director and Chief Counsel. Republican staff: Becky Cole, Chief Economist; Michael Gould, Detailee; Mike Quickel, Policy Director; Gregg Richard, Staff Director; and Don Snyder, Senior Tax Counsel.

OPENING STATEMENT OF HON. RON WYDEN, A U.S. SENATOR FROM OREGON, CHAIRMAN, COMMITTEE ON FINANCE

The CHAIRMAN. The Finance Committee will come to order. The Finance Committee meets this morning for our first hearing on America's energy transformation since the Inflation Reduction Act became law.

Two years ago, almost to this day, the committee voted on the Clean Energy for America Act in a room just a few doors away. In writing that legislation, our lodestar was developing a technology-neutral, market-oriented energy policy in which the more you reduce carbon emissions, the bigger your tax savings. The Senate Finance Committee, over a 100-year period, has never done anything approaching this in terms of energy policy. The old status quo—big breaks for big oil and major uncertainty for clean energy—was holding our economy back, and it was stifling innovation.

Since Democrats passed the IRA, there has been an explosion of new investment announced in clean energy projects around the country—wind energy, solar, electric vehicle manufacturing, energy storage, to name just a few. So far, those announcements add up to nearly a quarter-trillion dollars of private investment coming off the sidelines and nearly 150,000 jobs created, many of which do not require a college degree. One new analysis broke the announce-

ments down by state. Here are a few examples relevant to the committee: North Carolina, $5.6 billion; South Carolina, $11 billion; Ohio, $7.8 billion, a significant portion of which is solar manufacturing that our colleague from Ohio, Senator Brown, battled for to make sure that the bill would include it; Texas, $5 billion; Tennessee, $5.6 billion; Michigan, $20 billion.

These projects are taking over from sea to shining sea. They have exceeded expectations. The investments help America cut carbon emissions. They help America prevent the worst climate disasters. They help fire up the economic engine for whole communities where the shovels are going into the ground.

A big part of our effort in the IRA was giving a special boost to coal towns and other communities built around extractive industries. The status quo had failed them. Plants shuttered, and the people in those communities were too often overlooked and forgotten.

When this committee wrote the Inflation Reduction Act, people in coal towns had no bigger champion than Senator Casey. He worked to create a special program that we're going to discuss today, called, "energy communities." With energy communities, there is a bonus incentive that drives investment in struggling coal towns and areas with similar histories. My seat-mate here, Senator Stabenow, ensured that those communities would get an extra boost for advanced manufacturing.

And I will just tell my colleagues, over the 10-year odyssey from the time I went to West Virginia at Senator Manchin's request, Senator Stabenow was out in front on this issue of advanced manufacturing, and it is in the bill because of her leadership.

Senator Cortez Masto made sure the law would also track investment to communities with areas known as brown fields, which are often the polluted remnants of old industrial facilities.

This work continues a longstanding effort by Finance Committee Democrats to stand up and go to bat for coal miners and their families. Senator Brown and Senator Casey fought for years to shore up the miners' health care and pensions. Senator Warner and Senator Carper were also cosponsors of the legislation that got that done.

So, colleagues, the IRA is major progress on clean energy that's just beginning to take off now that the rules pertaining to energy communities were recently put in place. The catch is, House Republicans want to repeal nearly all of the energy policies in the Inflation Reduction Act. That's what the McCarthy plan does.

In my view—and I want to be clear about it—the McCarthy plan is a major act of economic self-sabotage. That's because a majority of the investments announced since the IRA became law are going to States represented by Republican Senators.

Now, I'll wrap up with just a couple of comments about this debate.

I've heard members say that IRA policies on energy were unnecessary because these clean energy investments would have happened on their own. The reality is, the level of clean energy investment and job creation would not be anywhere near as high without the Inflation Reduction Act. That's because the old system was

holding back innovation. It was holding back our opportunity to have this extraordinary investment wave.

Other claims have been made that the IRA is somehow a threat to America's energy security. Off-base again. The IRA is all about lowering carbon emissions and creating jobs with clean, made-in-America energy. The U.S. will be less reliant on oil and gas, and what that means is America will be less vulnerable if Vladimir Putin, or other adversaries of the United States, decide they want to create chaos and hike up energy prices.

Two years ago, in my view—and I'll close with this—members of the Senate Finance Committee showed real guts in being willing to cast the votes that launched this energy transformation. Even as we walked out of the committee room, people said, "That was pretty amazing, what happened in the Senate Finance Committee, but I don't know if that's going to become law."

And yet, what this committee did was to cast the tough votes. This committee took on the special interests almost 2 years ago, and now the Inflation Reduction Act is proving that you can cut carbon emissions and create jobs and opportunity for Americans all at the same time.

So, I thank our witnesses. I think we're going to have a good hearing. I think it will be spirited, so we'll have a chance to do what we do best in this country, which is make sure that in our land of freedom, everybody gets a chance to be heard.

Senator Crapo?

[The prepared statement of Chairman Wyden appears in the appendix.]

OPENING STATEMENT OF HON. MIKE CRAPO, A U.S. SENATOR FROM IDAHO

Senator CRAPO. Thank you, Mr. Chairman, and I appreciate your holding this hearing. This is one of those where we do have a disagreement. Many members of this committee on both sides of the aisle have long recognized the need to reform our energy laws in the United States. But rather than achieve a stakeholder-informed, bipartisan energy policy that would support technology-neutral approaches, my Democratic colleagues pursued a partisan path through their misnamed Inflation Reduction Act.

Republicans warned that the IRA would take us down a dangerous, fiscally irresponsible path to provide ever-ballooning subsidies, antagonize our allies, and ironically, reward the very industries that are reliant on China. Unfortunately, what we warned of has come to pass, leaving Americans to deal with the fallout of these predicted consequences.

The IRA's costs keep rocketing upwards by hundreds of billions of dollars. For example, Penn Wharton's budget model originally estimated the climate and energy provisions in the IRA would cost nearly $385 billion, a striking figure on its own. After new implementation details emerged, Penn Wharton revised that model, estimating the climate and energy provisions would actually cost over $1 trillion. Spending on clean cars and trucks alone is now estimated to cost $383 billion over 10 years, more than the original estimate for the entirety of the IRA's energy and climate-related provisions.

To mitigate our allies' anger on electric vehicle tax credits, the Biden administration decided to usurp congressional authority by redefining the long-understood concept of market-oriented free trade agreements to now include agreements that fail to open any markets for American workers.

Additionally, the Treasury Department has announced several sets of rules and planned rules that will enable Chinese minerals, materials, and entities to qualify for IRA subsidies, while potentially also excluding domestic players who are connected to traditional energy sources.

Meanwhile, the taxpayers who bear the cost of this government largesse still suffer from the inflation that it caused, and that remains far too high. People who find they can no longer afford much of what they once could are forced to fund green energy subsidies that do nothing to help reduce inflation but are likely to make it worse.

The rushed, disjointed policies at the heart of these provisions were unworkable from the outset. The Biden administration has resorted to unilaterally walking back and diluting key guard rails at every opportunity. The result of the administration's actions, however, will support manufacturing jobs overseas and cede additional control of our supply chains to foreign competitors, as even some of my colleagues across the aisle have acknowledged.

In the interim, the IRA fails to provide any real permitting or regulatory reforms, which leads to widely disparate results, even for the same exact types of projects. Projects that would already be economically viable receive a subsidy windfall under the IRA, but those projects which may have existing regulatory or permitting roadblocks receive insufficient benefit to move forward.

Meanwhile, American taxpayers are left footing the direct and indirect costs of this trillion-plus-dollar bill. And while many U.S. companies and American consumers are at a disadvantage under the new green energy regime, there is one clear winner: China. When it comes to producing batteries for electric vehicles, for example, China is the economic winner by a landslide.

China controls more than 60 percent of the battery cathode and separator production, more than 70 percent of the battery electrolyte and battery cell production and lithium and cobalt refining, and more than 80 percent of battery anode production.

The New York Times recently reported, despite billions in western investment, China is so far ahead mining rare minerals, training engineers, and building huge factories, that the rest of the world may take decades to catch up. Even by 2030, China will make more than twice as many batteries as every other country combined.

China's production dominance is also on display in the solar industry, which, as *The Washington Post* recently noted, dominates the market for the wafers and polysilicon used in them, controlling some 95 percent of the supply. The IRA is a gift to China, where economies of scale, supply chains, and first-mover advantages, as well as the unreasonably lenient Treasury regulatory guidance I previously referred to, ensure that for the foreseeable future, most of America's green energy growth will be originating from the one place that the IRA claims it should not.

Instead of increasing U.S. dependence on China and further encouraging manufacturing overseas, my Republican colleagues and I support a common-sense all-of-the-above approach. We also share Americans' justified concerns with the forced shift to certain types of green energy that the administration's broad-based effort to eliminate traditional energy sources will do.

I look forward to hearing from our witnesses today about the actual outcomes of the IRA's green energy subsidies.

Thank you, Mr. Chairman.

[The prepared statment of Senator Crapo appears in the appendix.]

The CHAIRMAN. I thank my colleague. And my friend and I have talked about this often. I'm just going to be very brief. This committee is always going to try to work in a bipartisan way, and Senator Crapo and I have reminisced over this 2-year period. I felt we were inches away from an approach that both sides would agree on that we called technological neutrality.

And at one time there was a joint effort between Senator Whitehouse from Rhode Island and my friend from Idaho. We were like inches away. And what I was busy doing was shuttling back and forth trying to see if we could get some traction. And Senator Crapo is always gracious, nodding and all the rest.

But there's an opportunity for both sides to come back to ideas that we've been talking about for a long time. And the reason we liked technological neutrality is, it made sure that everybody would have a chance to be part of the competitive universe. But because nobody really knows what will be the big carbon reducers 20 years from now, technological neutrality brought a kind of scientific kind of opportunity.

So I just want to say to my friend, we talked about it a long time ago, 2 years ago. We're going to keep talking about ideas. There are strong differences of opinion today, but I look forward to working with my colleagues around good ideas, which has been our way here.

Senator CRAPO. Well, thank you, Mr. Chairman, and I hope that we can get back to those discussions, because they were the kind of thing that I think would have really made a huge difference. One thing I forgot in my statement is, I'd like to ask unanimous consent to put into the record a letter to you and me, and the rest of the committee, from the Associated Builders and Contractors.

The CHAIRMAN. Without objection. And this committee has always been idea-driven, and we're going to continue to be.

[The letter appears in the appendix beginning on p. 48.]

The CHAIRMAN. Okay. We've got four excellent witnesses. Let me give a little bit of an introduction for three of them, and then the leader of the effort to stand up for energy communities from Pennsylvania, Senator Casey, is with us. And I'll give an introduction for the first three, and we'll turn it over to Senator Casey to introduce our final witness.

Dr. Katie Harris is a legislative director of the BlueGreen Alliance, where she leads the Alliance's Federal policy effort on a variety of issues, including infrastructure, climate change, labor standards, and energy traditions.

The Honorable Daniel Simmons, the principal of Simmons Energy and Environmental Strategies, helps his clients utilize his 2 decades of policy experience in Washington, DC for both the executive and legislative branches.

And our next witness, Mr. Philip Rossetti, is with us, a senior fellow of the R Street Institute, doing research on energy, climate, and environmental policies to include low-cost and free-market opportunities.

All three of those witnesses are thoughtful, and I think are going to give us good ideas today. And then I think it is a real pleasure to have one of Senator Casey's experts here with us, and he'll introduce our final witness.

Senator CASEY. Mr. Chairman, thanks very much, and thanks for convening this hearing about investments in energy communities. I want to thank you and the ranking member. I'm chairing an Aging Committee hearing upstairs, so I've got to head back there, but I'll be back here in a little while. But today I have the honor to introduce Patty Horvatich, who has spent decades growing the economy of southwestern Pennsylvania.

As senior vice president with the Pittsburgh Regional Alliance, she's helped to lead southwestern Pennsylvania as a region through very troubled times, with the decline of both coal and steel, and manufacturing jobs more broadly. But under Patty's leadership, the region is coming back stronger than ever; in fact, it's already back, I'd argue, with new investments in life sciences and energy, advanced manufacturing, and so much more.

Patty works with businesses that are considering many sites across the country, and shows them why locating in southwestern Pennsylvania is a very good decision. In the past 6 years, she's twice been named one of North America's top 50 economic developers.

She knows what it takes to create jobs and build a successful regional economy, and, as a result of her efforts, billions of dollars in new investments and thousands of new jobs have come to southwestern Pennsylvania.

So, Patty, thanks for being here today and for your testimony, and I look forward to coming back to the hearing a little later.

Thank you.

The CHAIRMAN. For all of our witnesses, we're going to make your prepared statements a part of the record in their entirety, and if you could take your 5 minutes and just speak to us, that would be great.

Dr. Harris?

STATEMENT OF KATIE HARRIS, Ph.D., LEGISLATIVE DIRECTOR, BLUEGREEN ALLIANCE, WASHINGTON, DC

Dr. HARRIS. Great; thank you. Chairman Wyden, Ranking Member Crapo, and members of the committee, my name is Katie Harris, and as you said, I'm the legislative director at the BlueGreen Alliance. The BlueGreen Alliance unites labor unions and environmental organizations to solve today's environmental challenges in ways that maintain quality jobs and build a stronger, fairer economy.

At BGA, it's our belief that we don't have to choose between good jobs and a clean environment. We can, and must have both. The Inflation Reduction Act's investments can help turn this belief into a reality. It delivers strong investments in clean energy that will support and create high-quality union jobs, particularly in hard-hit communities, while helping us reach our climate goals.

Lifting up workers and communities should be a central focus of a cleaner economy. Along with their communities, energy workers have always been the backbone of our economy, but as we transition to clean energy, energy workers and communities are losing jobs, tax revenue, and union membership.

They need and deserve dedicated Federal support that builds on community-driven economic development and diversification efforts. While there is no silver bullet that can fully address the energy transition for workers and communities, the Inflation Reduction Act does provide critically needed investment, particularly by driving clean energy and manufacturing investments into communities impacted by energy transition.

All of the laws, investments, and more will be needed to drive towards a truly equitable transition. The clean energy tax credits in the Inflation Reduction Act will not only help reduce emissions, but provide high-quality jobs in the clean economy. Crucially, the law includes provisions that make it more likely that the jobs created by these investments are high-quality jobs here in the United States.

The law, for the first time ever, includes high-road labor standards that go hand in hand with clean energy development. To receive the full value of the tax credit for projects 1 megawatt or higher, developers will have to pay a prevailing wage and utilize a certain percentage of registered apprentices in the projects.

These tax credits will also help address racial and economic inequality through two bonus credits. One of these, the energy communities credit, provides a bonus for projects located in communities that have seen significant job loss in the fossil fuel economy due to the closure of a coal mine, coal-fired power plant, or also are host to a brownfield site.

While clean energy projects can receive partial tax credits regardless of location, this additional tax credit bonus is a key incentive to bringing good-quality jobs to energy communities. A revival of the 48C tax credit is another key investment that will support clean technology and manufacturing facilities in energy transition communities, with an expanded investment tax credit.

The tax credit is funded at $10 billion, which will support the establishment and expansion of manufacturing facilities to produce solar, wind, battery, electric vehicle, energy efficiency, and other clean energy technologies. And critically, of that $10 billion, $4 billion is reserved for manufacturing investments to boost job growth and economic opportunities in coal communities dealing with recent closures.

Since the Inflation Reduction Act passed, companies have announced over $242 billion in clean energy investments in 41 States. We expect this could create more than 140,000 jobs. Many of those jobs will be in the communities that have endured decades of divestment, de-industrialization, and economic insecurity.

As the United States ramps up efforts to grow the clean economy, this law gives us the opportunity to lead globally while rebuilding good-quality union jobs in communities across the Nation.

Thank you again for the opportunity to speak today.

[The prepared statement of Dr. Harris appears in the appendix.]

The CHAIRMAN. Thank you very much.

Mr. Simmons, you're next, and we appreciate everybody.

STATEMENT OF HON. DANIEL R. SIMMONS, PRINCIPAL, SIMMONS ENERGY AND ENVIRONMENTAL STRATEGIES, FALLS CHURCH, VA

Mr. SIMMONS. Thank you. Chairman Wyden, Ranking Member Crapo, and members of the committee, thank you for the opportunity to testify today.

I support working to increase jobs and investment in economically distressed communities and traditional energy communities. But the way the Inflation Reduction Act defines energy communities appears to be leading to some odd outcomes. I say "appears" because, if the Federal Government has released the final maps showing the energy communities, I haven't found them. From the website it said they should be available this month, so we still have a few more days.

Just 2 miles south of here is an energy community. It is a sliver that runs from the Anacostia naval station south to DC Water's Blue Plains water treatment plant, and then across the Potomac to Virginia, where it includes northern Alexandria, but not southern Alexandria.

This is an energy community because there used to be a 500-megawatt coal-fired power plant in northern Alexandria. Also, I should note that northern Alexandria would be designated as an energy community, but southern Alexandria would not.

Because I grew up in northern Utah—and it turns out that also Dr. Harris grew up in northern Utah—most of the communities of northern Utah may be designated as energy communities if they meet the unemployment rate requirements, but that hasn't been determined yet.

But none of the Idaho counties bordering Utah would be designated as energy communities. Also, there may be similarly odd outcomes along the Oregon-Idaho border, where Idaho, Adams, Washington, and Payette counties in Idaho may be designated as energy communities, but none of the Oregon border counties will be designated as energy communities.

So my question is, does this make sense? Does it make sense to provide these beneficial tax credit bonuses when the results are so odd? Even though people are unlikely to site a wind or solar facility in Alexandria, shouldn't the tax treatment be the same for northern versus southern Alexandria? And I think the same should be true of western Oregon versus eastern Idaho.

Instead of such outcomes, I think it would be preferable if we focused on permitting reform, as Chairman Wyden talked about, ideas where we should have some bipartisan agreement. If the goal is a rapid increase of renewable energy generation technologies, then permitting reform is indispensable.

The National Renewable Energy Laboratory has estimated that to meet President Biden's goal of a net zero grid by 2035, transmission capacity would need to triple today's capacity. While the energy community tax bonus may help build wind and solar projects, the Federal Government is incredibly slow at permitting the needed transmission.

Just last month, the Biden administration approved the start of construction for TransWest Express that runs from Wyoming to southern Nevada. The Biden administration deserves kudos for getting this approval across the finish line, because it has taken more than 15 years since the company first filed this preliminary right of way with the Bureau of Land Management.

A similar story is true with the Gateway South transmission line from western Wyoming to central Utah. Like TransWest Express, the approval came 15 years after the company filed its original application. Just this morning I saw in *The Wall Street Journal* that it looks like the Biden administration is going to grant approval for the SunZia transmission line that goes from New Mexico to Arizona.

And again, it was around a 15-year approval process, even though that one was fast-tracked during the Obama administration. The reality is, the average development time frame for major new transmission lines that require a Federal permit under NEPA is 10 years. This needs to be significantly shortened if we are to ensure a reliable and resilient electric grid.

Also, while energy community designation will facilitate more projects, the new energy economy requires massive amounts of minerals and materials. For example, an electric car requires six times the mineral input of a conventional car. The International Energy Agency's sustainable development scenario calls for a 42-fold increase in lithium demand, 25-fold increase in graphite demand, 21-fold increase in cobalt demand, 19-fold increase in nickel demand, and a 7-fold increase in rare earths by 2040.

Currently, much of these minerals and materials are mined and processed overseas. China is the largest processor of copper, cobalt, nickel, lithium, and rare earths, processing between 35 and 85 percent of these minerals. We can process and mine much of these right here in the United States with a much better environmental track record, and a much better human rights track record, but again, we need permitting reform. The Biden administration has slow-walked new mines in the United States, instead of allowing the needed new development.

Thank you for your time, and I'll be happy to answer any questions.

[The prepared statement of Mr. Simmons appears in the appendix.]

The CHAIRMAN. Thank you, Mr. Simmons. And obviously, we're not dealing expressly with permitting reform today, but let me just say—and I note my friend, Senator Whitehouse, is here. You don't have a bigger climate hawk than Senator Whitehouse, and I'm pleased to be joining him on this.

We believe strongly in permitting reform. We just believe that permitting reform and protecting the environment aren't mutually

exclusive. We can do both, and we're committed to getting this done.

Okay. Mr. Rossetti?

STATEMENT OF PHILIP ROSSETTI, SENIOR FELLOW, ENERGY AND ENVIRONMENT, R STREET INSTITUTE, WASHINGTON, DC

Mr. ROSSETTI. Chairman Wyden, Ranking Member Crapo, and distinguished Senators of the committee, thank you for inviting me to testify today on the effects of the Inflation Reduction Act on energy communities.

At the R Street Institute, we would say that we would praise the intent of the Inflation Reduction Act, since we were one of the first free-market think tanks to focus on climate change; however, we would note that the IRA's narrow focus on subsidies diminishes its effectiveness in achieving those outcomes.

In our research, we found that much of the subsidies would go to firms that would have invested in clean energy even without the legislation. Looking at just the electricity subsidies, which are the largest component of the IRA, where there's about $180 billion, we would estimate that two-thirds of that will go to firms that would have been investing in clean energy without the IRA, so that's $120 billion of investment without an additional climate benefit.

Importantly, the biggest claimants to these subsidies are going to be the wealthiest Americans, because those are the biggest consumers of clean energy. One economist estimated that an American in the top 1 percent can expect about $11,000 of subsidy to them from the IRA. Effectively, this makes the IRA a transfer from taxed Americans to the subsidized Americans.

Other reasons that the IRA is so inefficient in its distribution and achievement of mission outcomes is because what's holding back clean energy is not capital availability. There are many people investing in clean energy. It's permitting issues, it's siting issues, it's grid interconnection issues.

Last year, there were over 1,300 gigawatts of electricity-generating resources and storage resources trying to connect to the grid, and over 1,200 gigawatts of that was low-carbon resources. This is up 35 percent from the year prior. The process of connecting new resources to the grid used to take under 2 years; now it takes more than 5 years.

Our research at the R Street Institute has found that renewable projects are also more likely to require higher levels of environmental review in the permitting process. The Brookings Institution has found that wind energy projects and transmission projects take longer to permit than fossil fuel projects.

Importantly, Princeton University found that 80 percent of the emission benefits that could be achieved under the IRA are locked behind transmission growth. Permitting reform is essential to achieving the emission outcomes that are stated when it comes to this legislation.

What we're seeing is that the biggest factor actually in siting and building new clean energy resources is typically a factor of transmission availability. It's a factor of the technical potential of renewable resources that generate power, and it's not necessarily capital availability. So, even provisions like extra subsidies for select com-

munities may not be the deciding factor in whether or not clean energy is constructed.

It's also important for us to consider the full context of the United States' fiscal picture whenever we're talking about continued subsidies. We expect to have about $1.4 trillion of deficit this year. If we were to close that deficit by simply having an even tax on all taxpayers, that would be over $8,000 per taxpayer per year.

Deficits are expected to rise to $2.7 trillion by 2033, and this is largely a product of the rising cost of servicing our existing debt. Interest payments by 2028 will eclipse the defense budget. In this context, the more we spend, the greater our debt, the more interest payments, and this limits our effectiveness in stimulating clean energy growth by just continued subsidy. Importantly, we should acknowledge that the IRA was supposed to reduce deficits; however, the rising cost of the clean energy subsidies means that that's less likely now.

The Joint Committee on Taxation released an updated estimate of the clean energy provisions of the IRA, and what it would save to repeal them, and they estimated $570 billion. Initially, the total clean energy provisions were estimated at $370 billion when the IRA was initially scored.

With that, it's important to understand that the tax increases in the IRA are also going to have an effect that counterweights the subsidy impacts. So, we can point to specific communities that receive subsidy and say they are benefiting from this. However, we also have to acknowledge that that is paid for by a tax increase on Americans elsewhere. Even the corporate minimum tax in the IRA, we expect about half of that to fall on corporate workers. And the Tax Foundation estimated that the net effect of the IRA will be to reduce full-time equivalent jobs in the U.S. economy by 29,000.

In short, the IRA has benefits, but it also has costs. These costs may outweigh the benefits, and what's really holding back clean energy is the permitting issues, issues that are not easily remedied by additional subsidy.

With that, I look forward to your questions.

[The prepared statement of Mr. Rossetti appears in the appendix.]

The CHAIRMAN. Thank you very much.

And, Ms. Horvatich, welcome.

STATEMENT OF PATTY HORVATICH, SENIOR VICE PRESIDENT, BUSINESS INVESTMENT, PITTSBURGH REGIONAL ALLIANCE, PITTSBURGH, PA

Ms. HORVATICH. Chairman Wyden, Ranking Member Crapo, and members of the Senate Finance Committee, thank you for the opportunity to testify today regarding the IRA's tax credits, including the bonus for programs, facilities, and technologies located in energy communities.

My name is Patty Horvatich, and I am the senior vice president of business investment for the Pittsburgh Regional Alliance, an affiliate of the Allegheny Conference on Community Development, and I want to thank Senator Casey, my home State Senator, for his leadership to ensure that legacy energy communities like ours have not been forgotten, and instead are placed at the forefront of

Federal efforts to attract new energy and manufacturing investments.

For decades, the Pittsburgh region's massive coal reserves were ideally suited to support both heavy industry and energy production. These abundant resources helped to turn the Pittsburgh region into a global manufacturing powerhouse. Pittsburgh energy powered our homes and our steel mills, and it was the fuel that built our Nation.

As times changed, our region's coal-fired power plants and mining operations shut down; others have been replaced by lower-carbon natural gas. The communities with closed facilities now face harsh realities from loss of jobs. Between 2010 and 2022, southwestern Pennsylvania lost approximately 3,100 coal mining jobs. These jobs supported an additional 5,100 indirect and induced jobs.

During that same period, we lost 900 jobs at coal-fired power plants. These jobs supported nearly 4,000 additional indirect and induced jobs. That's over 13,000 jobs alone in our region, and there are many more closures on the way. Homer City Generating Station, one of our region's last coal-fired power plants, recently announced plans to close that facility. That means more layoffs, more job losses.

Despite these hardships, today southwestern Pennsylvania is open for business, a sentiment shared with our leadership, specifically by Governor Josh Shapiro and his administration. Our regional economy is diverse, focused on advanced manufacturing, energy, life sciences, robotics, space, and more.

These economic opportunities are supported by a high-quality, skilled workforce and driven by robust R&D, home to national labs, including the National Energy Technology Laboratory, and two Tier 1 research institutions: Carnegie Mellon University and the University of Pittsburgh.

Our region is a trailblazer and leader in critical technologies. Our strategic location is complemented by navigable waterways, air, rail, and highway infrastructure—all attractive assets for industrial investment. We have a track record of public-private partnership. We are applying it and working across government, industry, labor, philanthropy, and academia to advance an all-of-the-above energy strategy.

This spans carbon capture and hydrogen to scaled-up production, modernized distribution, and efficient use of low-carbon electricity to accelerate decarbonization, drive investment, and achieve inclusive growth. While we have powerful assets to build upon, economic growth and vitality for all parts of our region are not a foregone conclusion.

There is intense global demand for new ways to produce and store energy, creating a robust pipeline of large-scale, capital-intensive, job-creating projects from electric vehicle and chip manufacturing to battery and solar projects. And energy communities like ours have assets that if readied, can allow them to compete.

Take real estate for an example. We are not able to create more land to compete with regions with greenfield sites that do not have the same legacy challenges. We need to get former coal sites back to their highest and best use, and positioned to secure new investment.

Pennsylvania is being proactive to ready these sites. We have worked with the State to develop detailed economic development playbooks, with support from the Federal power grant program to revitalize our shuttered coal sites. Our goal is to return these sites to productive use as quickly as possible to help these communities begin to recover. The IRA's tax credits will ensure that we can bring increased Federal commitments to catalyze investment in these former coal communities.

I have worked in economic development for 26 years. The factors that drive successful investment deals are varied and complex. When a site's selection consultant is tasked with siting a new power plant or manufacturing facility, they are weighing site readiness; access to navigable waterways and class 1 railroads; operational costs, including business taxes; workforce availability; and more.

For sites like our legacy coal sites to be in the conversation to compete for new investment, they have to be ready to go. These new Federal tax credits help us to be competitive on a global scale. They keep us in the game.

In the last few weeks, I have spoken to multiple companies and site consultants who want to explore communities where these tax opportunities can be realized. The IRA's tax credits, with the bonus credit, are another important tool in our tool box to encourage investment in our legacy energy communities.

Thank you for the opportunity to provide testimony, and I look forward to your questions.

[The prepared statement of Ms. Horvatich appears in the appendix.]

The CHAIRMAN. Thank you very much, Ms. Horvatich, and to all of you.

Let me start this way. Mr. Simmons expressed considerable skepticism about energy communities. Ms. Horvatich, you are on the ground in these communities, and I think your statement for the record, and what you said today, is that since the IRA was passed, you have seen more interest in investments in southwestern Pennsylvania out there on the ground. Is that correct?

Ms. HORVATICH. Yes, sir. That is correct. There has been an uptick in requests for information from both companies and the site consultants who advise such companies.

The CHAIRMAN. So, going forward, because we're all acknowledging that there's still work to be done, my sense is, listening to Senator Casey in particular, this new interest that you describe provides an opportunity to reverse disinvestment in communities like those in southwestern Pennsylvania. Are you okay with that?

Ms. HORVATICH. Yes, sir. I am. It levels the playing field for us.

The CHAIRMAN. So, let's say this hadn't been done, okay? And all the people were skeptical, either didn't want to do it, or some other time, or something like that. What if these tax incentives that Senator Casey, Senator Brown, and others pushed so hard for—in advanced manufacturing, again, that Senator Stabenow had pushed hard for—what if those weren't being made available? Would it just have been business as usual?

Ms. HORVATICH. No, sir. The job losses, not just from the direct employees, but from the indirect and the induced—so that would

be their service providers, and the people getting gas at the gas stations and groceries at the grocery store—these communities, both the people and then the place, the assets that need to be demolished and remediated and prepared for another use, they would just remain. So this gives us great hope.

The CHAIRMAN. Right. But it gives us the possibility to make a change from the status quo? That's what I'm asking.

Ms. HORVATICH. Yes, sir. It does.

The CHAIRMAN. Great. Tell us what you hope to achieve while you're here in the Senate Finance Committee. I understand some people are paying attention to your testimony. You're hoping it will reach other people?

Ms. HORVATICH. Yes, I am.

The CHAIRMAN. All right. Well, that's the point of the hearing, because what I think we need to do is to tell this story. These rules are still coming out, we're still refining the whole area, but you've hit the bottom line.

A, you're getting more interest; B, it's a chance to reverse this disinvestment; and C, if we didn't have the credits, things would, at best, be what we've got. And as you say, things would slip from there, so this is very helpful. I thank you for it, and let me go to you, Dr. Harris.

Same topic. What happens if we don't have these tax incentives?

Dr. HARRIS. Thank you for the question. I think I would just lift up something that Ms. Horvatich said, which is that the sites need to be ready to go. You know, they might not be already, so having the energy community bonus credit is really that key incentive to bring folks in, to bring developers in, and allow them to get the site ready, basically, as she said, and prepare the energy communities that have dealt with this job loss and economic uncertainty.

The CHAIRMAN. Good. So, I'm going to get both of you involved in another question, and that is, there has been a real challenge in a global economy to find a way to make sure that we generate more local jobs. And my sense is that what we've designed is a real blueprint for creating more local jobs, because we're going to make companies more competitive on the ground because of the way the tax incentive was structured.

You mentioned, Ms. Horvatich, the question of the local bonus and the like. I mean, from the time we began those discussions with Senator Manchin, that was a key area. So, is that part of the reason you're optimistic that there's going to be a chance to focus on the creation of local jobs?

Ms. HORVATICH. Yes, sir, it is. I like to think of it in three different buckets, maybe envision a spreadsheet where there's U.S. energy community, U.S. non-energy community, and international competition. As these companies make their land acquisitions and their machinery and equipment, there's always some fixed costs at the beginning. But once you add in the operational costs, which includes utilities, and then taxes once they're profitable, that levels the playing field for us.

The CHAIRMAN. Good.

Well, my time has expired, but I think what several of you have done this morning is made it clear that to have passed on this strategy, and have passed on the idea of going to bat with the

kinds of measures we've taken for the energy communities, would have left you out there with sort of business as usual, hoping that somebody might come through and express an interest. Now we've got a real alternative. That's what we were hoping for when we started this odyssey a decade ago.

Thank you all, and I've asked questions particularly of a couple of you who are on the ground in southwestern Pennsylvania and the region, and I appreciate it.

Senator Crapo?

Senator CRAPO. Thank you very much, Mr. Chairman.

And, Mr. Simmons and Mr. Rossetti, I'd like each of you to respond to my first question. While some tout that the IRA green energy incentives are being transformational, others observe that non-tax roadblocks are serious impediments to widespread adoption, and that the IRA will fall far short of its lofty stated goals.

For example, a recent Princeton study found that 80 percent of the potential carbon emissions reduction from green energy projects funded by the IRA would be lost without significant expansion of transmission lines. To me, this gets into that question of permitting reform that each of you referenced. Please discuss this with me.

How big of an issue is this with regard to the development required to bring a project online, and how big is the transmission line issue in this entire context?

Mr. SIMMONS. Senator, the transmission line issue is huge. One of the things that we have seen is, there is no doubt that tax incentives will drive additional money to these projects. There's no doubt about that; that is certainly happening. The question, one of the big questions, is how quickly then can those projects get online and be connected to the grid?

Mr. Rossetti mentioned the grid interconnection issues. These are growing in length as it takes longer and longer to connect new sources of generation to the grid. Not only that, but when you have a grid that is evolving—and the study that I mentioned from NREL estimates that we need to triple the grid.

There are other estimates that can be even larger than that, and when it takes 15 years—and there were three projects that I mentioned that have taken 15 years, and those are mostly on Federal lands. The Federal Government needs to be much quicker, and it's not just projects that are on Federal lands. If you have a 100-mile-long transmission line that crosses Federal lands for a mile, it would still have to go through NEPA for that because it crosses Federal lands.

And the way that it works is, it would have to examine the entire 100 miles if it triggers NEPA, and not just be the 1 mile. So, it's a huge issue.

Senator CRAPO. Mr. Rossetti?

Mr. ROSSETTI. One thing I would add to that is, when we look at NEPA and permitting, these issues, you can have small projects that might get permitting quickly, but the really big, impactful projects are the ones that are most likely to run afoul of long permitting timelines.

What we see as a big factor in this is actually litigation risks. So, the bigger the project, the longer it takes for environmental impact statements. And it's not so much that the quality of environ-

mental outcomes of the project is better with these long timelines, it's just that there's more ground to cover.

So, getting that done more efficiently, you've got way more benefit, and you unlock a lot more investment. But also, when we think about the sort of idea of much more renewable energy and clean energy, the technical potential of those resources is in places like Texas, Iowa, and there just is not the transmission to get them to the communities that would have the most demand for them.

Senator CRAPO. Well, thank you.

And back to you, Mr. Simmons. The chairman referenced that there's support for permitting reform, but he wanted to be sure that it was done in a way that was environmentally helpful, and I share that goal. It seems to me, though, that in the context of the discussion we're having here today that permitting reform would be hugely beneficial to the environment.

But anyway, would you discuss the question of that perceived conflict, if there is one, between permitting reform and protecting and strengthening our environment?

Mr. SIMMONS. Yes. I mean, one of the interesting things about NEPA is, NEPA is not a regulatory statute; NEPA is an informational statute. The point of NEPA is to provide information; however, it takes a long time to provide that information, so NEPA itself does not protect the environment.

What protects the environment are the Clean Air Act, the Clean Water Act—you know, these other laws. And as a result, when you have this informational statute that is taking up a decade-plus in many cases—there was another project that only took 7 years that recently the Biden administration signed off on, and kudos to that, but it was still 7 years for 150 miles.

We need to do projects like that in 1 year or less. Plus, when it becomes more difficult to do projects in the United States for things such as mining, minerals processing, those environmental outcomes are going to go to other countries. And anywhere else in the world is going to be worse in terms of the environmental outcomes of mining, mineral processing, than in the United States.

I mean, obviously, Canada, great. But China, the Democratic Republic of Congo, all those places you're going to have worse environmental outcomes. And that's why I believe that if we're going to need all these minerals and materials, it's much better to do those projects here in the United States where we have better labor standards, but we also have better environmental outcomes.

Senator CRAPO. Thank you.

The CHAIRMAN. Senator Stabenow?

Senator STABENOW. Well, thank you so much for this hearing, Mr. Chairman and Ranking Member. You know, I feel like we've been debating for a long time the whole question of how do you move the American economy? How do we have good-paying jobs? And I think we now have the contrast actually very clear.

We have for a long time had folks who said major tax cuts for wealthy individuals, corporations, the capital at the top, maybe do some investment tax credits, but then let the jobs go wherever they go. And what unfortunately has happened is really a race to the bottom for our people in America.

And I certainly can speak for Michigan, because the jobs went somewhere else to the lowest wage, rather than investing in production here, and creating the jobs here. And so I believe that the Inflation Reduction Act, coupled with everything we've done on CHIPS and infrastructure and the other provisions, are a jobs transfer, not a wealth transfer. Maybe a wealth transfer in the sense that we're not just all focused on the people at the very top, and it never seems to trickle down. Not only the money, in terms of people's pockets, but the jobs haven't trickled down. And now what we have is a jobs transfer.

So, we have a different view, and yes, it is an industrial policy. Yes, it is about investing in America, buying in America, doing those things to bring jobs home. And you know what the great thing is? It's actually working. We actually have an advanced manufacturing renaissance going on.

There are projects coming to Michigan that were on their way to Canada, on their way to Mexico, on their way to other places, and now they are in Michigan. And I know that's true across the country. In just 9 months, companies have announced nearly a quarter of a trillion dollars in clean energy investments and over 140,000 new good-paying American jobs.

So I feel like we've got the case now. This is not theory anymore about should we invest in America, should we invest in American workers? And what we did in the Inflation Reduction Act was do production tax cuts, Mr. Chairman, battery production. You don't get the credit unless you produce it in America. You don't get the solar credit unless you produce it in America, and so on and so on. And that's what is beginning to happen.

So this is, I think, very exciting, and unfortunately, we're still having to fight. The House Republicans want to tie threatening default of our country and crashing the economy to removing these incentives that are creating jobs and bringing jobs home, which just boggles my mind. But that's where we are.

And so, what I'd rather do is take away some of the tax cuts that passed in 2017 that blew the biggest hole possible in our deficit, and put some of that money again back into investing even more. But here let me ask some questions, because I feel very strongly about this. For years I have been focused on how we had a race to the bottom going on, not a race to the top in America. And now we are actually turning that around, which I am thrilled about, with President Biden and what we've been able to do.

But I want to talk about 48C, Dr. Harris. This is something—and I want to thank the BlueGreen Alliance, who I've been working with it seems like forever, and I am so grateful. Back then we were saying you can invest in clean energy, you can tackle the climate crisis, and create jobs.

That was the mantra over and over again, and now we are actually showing that. But in 48C—I am very pleased to have authored the original 48C back when we were doing this in 2009, with the Recovery Act. Senator Manchin and I have brought it back now and extended it, which I'm very pleased about.

But I wonder if you could talk more specifically about what this means on the ground for communities? What sort of job creation

numbers do you expect, what kind of projects? What does this provision mean for energy transition?

Dr. HARRIS. Absolutely. Thank you for the question, and we really enjoyed working on that with you as well. So the $4 billion that's set aside in 48C is supposed to drive manufacturing directly into energy communities, and it does that by essentially removing difficulties to rebuild, retool, expand existing manufacturing facilities, so it just takes some of the barriers away.

Our estimates—we commissioned a report that says it should create somewhere around 110,000 jobs over the next 10 years, just the 48C tax credit.

Senator STABENOW. That's terrific; 110,000. That's great.

Well, thank you, Mr. Chairman. There is a lot more I'd love to talk about, but I know my colleagues have questions.

Thank you.

The CHAIRMAN. My mom always used to say, "Quit while you're ahead." One hundred ten thousand jobs. That's an important thing.

Senator Lankford is next.

Senator LANKFORD. Mr. Chairman, thank you. This is a really important conversation we're have here, our energy future, and whether that's going to be an American energy future, or whether we're going to be energy-dependent again. I grew up, like several others in this room, in the 1970s, and remember the long gas lines in the 1970s, and how we were energy-dependent on the Middle East.

We have worked our way, as a Nation, now to being energy-independent, and growing more and more diverse in our energy platform, but the Inflation Reduction Act seems to accelerate our energy dependence to China from the Middle East. The reason I say that is the timelines and the dates that are set on this and the permitting requirements that currently exist, and the incentives that are built in.

And quite frankly, even the made in America requirements that are in the bill itself seem to be fudged throughout the entire bill. This seems to be the Chinese Inflation Reduction Act, rather than the American Inflation Reduction Act, when I look at it. The most basic element of this is pretty straightforward.

If we're going to be at a point of electrification by 2035, all of this data that I've seen says we will need 300 new mines by 2035 to be able to meet the electric capacity—just getting the lithium, getting the cobalt, getting everything else—or we're going to be completely dependent on China.

Three hundred new mines. Currently processing now, we're somewhere between 7 years and 15 years to be able to bring a new mine onboard. We need 300 of them by 2035 to be fully operational, just the mining portion, not to mention all the rest of the production that's engaged in this as well.

So I do have lots of questions about this that I want to be able to walk through. Mr. Rossetti, you had mentioned this issue about permitting reform. Mr. Simmons, you did as well, on the issue of permitting at this point. You talked about the increased length of permitting projects, and what's out there. Can you expand, talk to us a little bit about permitting reform and where that's going, and

what it would take to do 300 new mines just to be able to bring the minerals onboard, not to mention the manufacturing?

Mr. ROSSETTI. That's a great question. So I look at the mineral needs of the United States; if we were to go to an entirely net zero future, they are enormous. And it's important to understand that there are also a lot of resources that we probably wouldn't be able to develop here in the United States because of their availability.

The resources that we could develop would be a lot of lithium and copper, and the current process for that has been exceptionally difficult. So we look at renewable resources, and transmission resources—that's sometimes an entirely different game because, for minerals, you can't avoid the footprint that's required.

And as such, you always run into issues of endangered species. So there's an endangered species of buckwheat that's holding up a lithium mine, and it seems like there is not an easy path forward to say, okay, how are we going to protect the species, because there's not an easy definition of saying what's the level of protection that's adequate?

We know what the level of listing of species is; we don't know how to say, okay, here's what's good or not. So fixing that, I think, is something that could be done in a way that actually preserves the environment and helps to improve outcomes by creating clarity on how to be prudent to our resources. But to the extent that we're actually getting there, it has not been—we haven't achieved that yet, but there are efforts, absolutely.

Senator LANKFORD. Well, there's obviously work to be able to get some of this investment from other countries. The Inflation Reduction Act included made in America requirements, but the administration has waived those now, and has declared Japan and Germany as America, and they now qualify for the made in America requirements, even if they come from Japan and Germany.

There were new battery incentives that were designed to be able to increase the battery production in the United States that actually went to Canada instead, and so Canada is getting a huge new battery facility to be able to sell into the United States on this. So we're seeing how a lot of these incentives are happening.

And I understand there are some additional jobs that are coming to America as well, but we still have this basic challenge. We're about to shift our energy dependency of day-to-day life to China, and to other locations and say we can't operate the most basic elements of our life, of transportation, of electricity, of anything else, unless the Chinese give us additional materials on that.

And that's a huge national security risk in this. Again, my State, I put my State against every other State on this dais for energy diversity. I dare you to look at Oklahoma's energy portfolio, and to look at what we have in energy diversity, between wind and solar and hydro and oil and gas and all the different energy formats that we use, geothermal, in our State.

We are an all-of-the-above energy State, and proud to do it, because we need more energy, not less. But we're also trying to produce that in a timeline that benefits American workers, not benefiting Chinese workers and Chinese investment. And that's what happens when we do an arbitrary timeline, and say we're all going to do it by this date no matter whether we have American manu-

facturing there in place, or whether we have the permitting in place to be able to accomplish this.

We shut down American mines and ship it over to China, and the dirty secret of every electric battery is, when you do anodes and cathodes, half of that is carbon, and so that is currently mostly coming from China as well. And so, there's a lot that we've got to discuss, that we've got to be able to figure out.

But if we don't solve permitting, this doesn't get better.

The CHAIRMAN. I'm going to go to my colleagues in just a moment, but I want to make it clear there is, in the black letter text of the law, no incentives for investing in China. But in the black letter text of the law there are substantial incentives for investing in America, in southwest Pennsylvania, as Ms. Horvatich has said.

I'm also going to put into the record, by unanimous consent, some information we have with respect to the $1.5 billion in investments announced since the IRA passage, which will create over 3,500 jobs in the State. Without objection, it's entered into the record.

[The information appears in the appendix beginning on p. 70.]

The CHAIRMAN. Senator Menendez?

Senator MENENDEZ. Well, thank you, Mr. Chairman.

The IRA, working alongside other pieces of legislation passed by Congress, has provided, in my mind, needed stability and certainty to the clean energy industry. This has helped to ensure and enable and protect large-scale investments made by the offshore wind industry in communities in my home State of New Jersey that historically have been economically underdeveloped, from the New Jersey Wind Port in Salem County that will support up to $500 million in new economic activity, to the $250-million manufacturing facilities at the Paulsboro Marine Terminal. Additionally, the offshore wind projects further us along in the development process. In New Jersey, I've made strong commitments to using union labor, ensuring that the jobs they create are good-paying union jobs.

Dr. Harris, we've spoken a lot today about the difference the IRA is making in energy communities, and assisting in the creation of a just transition away from fossil fuels. Can you speak for a moment about the ways in which clean energy industries like offshore wind are also creating new jobs and opportunities in many underserved communities like those in New Jersey and across the country?

Dr. HARRIS. Thank you for the question, Senator. Yes, I looked up a couple of other provisions; one is the Low-Income Communities Bonus Credit. It works similarly to the energy community's bonus credit, and provides an incentive for housing these sorts of projects, in exactly the communities you were speaking of.

And the other things I would lift up are the prevailing wage and apprenticeship standards attached to the clean energy tax credits. So, job quantity is important, but job quality is just as important, and the combination of those two actually means that we'll be creating accessible jobs to communities that might not have had a chance to have those jobs before.

Senator MENENDEZ. And speaking of job quality, how is the Inflation Reduction Act contributing to training and developing the next generation of highly skilled American energy workers?

Dr. HARRIS. Yes. Thank you for the question. Those apprenticeships I mentioned—and the apprenticeship requirements are extremely important. It means that the folks developing this energy will have access to highly trained, skilled union labor, and it will open the pipeline for that for years to come.

Senator MENENDEZ. Now, the Inflation Reduction Act isn't just helping us to meet our emissions reduction targets, but it's a driver, as we've been talking about here, in good-paying energy jobs. In New Jersey alone we expect to see over 300,000 new green jobs added over the next decade, demonstrating the need for a strong workforce and manufacturing base over a wide range of diverse clean energy sectors.

We're talking about reinvigorating American manufacturing, a sector that has been devastated by offshoring. Yet, if my colleagues have their way, all of this progress would be wiped out.

Ms. Horvatich, I understand that a major aspect of your work with the Pittsburgh Regional Alliance is to bring in high-quality energy jobs. Has the Inflation Reduction Act made that work easier?

Ms. HORVATICH. So, I can tell you that in the last several months, the number of inquiries that we have been receiving from end users and also site selection consultants has increased dramatically. So we look forward to those opportunities to actually close on those projects, so we can realize the benefits of the proposed tax credits, especially the bonus ones.

Senator MENENDEZ. Do you believe that rolling back the majority of these new clean energy tax incentives will impair the ability of your region to see a continued increase in energy sector jobs?

Ms. HORVATICH. Yes, sir. I do.

Senator MENENDEZ. Well, I appreciate your perspective. I think that this is one of the essential elements of what we're trying to create.

Finally, I look at the transition. The Inflation Reduction Act creates key incentives to assist energy communities—generally former fossil fuel communities diversifying their economies—to create new good-paying jobs in cutting-edge industries.

I think it would be wrong as policy to say, sorry, we're moving to a new clean energy economy, and so you're just left behind. That's one of the challenges we had with trade, where we said in the new economy, some people will benefit from it, others will not, and for those of you who do not, you're left behind. That's not what we seek to do here.

Dr. Harris, you represent a key alliance between the environmental community and labor organizations. Has this idea of a just transition, and the energy community provisions of the Inflation Reduction Act, enabled workers and environmental advocates to come together to support the vital policy changes necessary to avoid the worst impacts of climate change?

Dr. HARRIS. Yes. I think you know, both halves of our coalition recognize that the dual crisis of climate change and economic equality aren't going away on their own, and so that's why we were very happy to see this act passed.

Senator MENENDEZ. Thank you, Mr. Chairman.

The CHAIRMAN. I thank my colleague.

Senator Thune is next.

Senator THUNE. Thank you, Mr. Chairman, to you and Ranking Member Crapo. I appreciate the opportunity for this timely discussion, which incorporates two pressing matters before the Nation—energy security and runaway Federal spending. Energy security has taken on heightened importance in light of this administration's attacks on conventional energy, the war in Ukraine, and rebounding consumer demand as we emerged from the pandemic.

High energy costs have also contributed to the historic inflation that's become a hallmark of this administration and continues to hit the pocketbooks of American families and businesses. And while the Biden administration has provided no shortage of examples of runaway Federal spending, the so-called Inflation Reduction Act is a real standout.

Mr. Chairman, just 2 years ago this committee met to mark up the Clean Energy for America Act, which at the time was estimated to cost $260 billion. It passed along party lines, and later emerged in July of 2020 as the keystone of the so-called Inflation Reduction Act, this time with a score of $370 billion.

It should be no shock to Americans to learn that the actual costs of these Green New Deal policies are projected to reach $1.2 trillion, triple the initial score. The Inflation Reduction Act is part and parcel of the administration's out-of-control spending, further stoking inflation and driving up the deficit, but it didn't have to be this way.

During the 2021 markup, I offered an amendment which all Democrats opposed, to delay the windfall of clean energy credits until the average permitting time for major electricity projects fell below 3 years. At the time, industry testimony suggested the multiyear permitting and interconnection delays, not a lack of incentives, were stifling investment for modern energy development.

For example, the Department of Energy has reported that more than 930 gigawatts of solar, wind, hydropower, geothermal, and nuclear capacity are sitting in interconnection queues, seeking transmission access, as are more than 420 gigawatts of energy storage.

The DOE says this is enough energy capacity to meet 80 percent renewable targets in 2030. To me, this affirms the need for permitting reform, not a shortage of uncapped, green subsidies in the partisan Inflation Reduction Act. It is, and always has been the real impediment to modern energy investment.

Mr. Rossetti, there's a significant backlog of energy projects that are seemingly shovel-ready were it not for permitting delays. Does this mean that a significant portion of the investment that the Inflation Reduction Act is supposed to incentivize would already happen as the result of market forces regardless of the IRA's costly tax credits?

I'd like to have you respond to that, and secondly, additionally, given this backlog of energy development in an already-ballooning cost projection for the Inflation Reduction Act, do you think that enacting comprehensive permitting reform will supercharge the cost of IRA green energy credits to taxpayers, and if so, how is that going to affect the fiscal outlook for this country?

Mr. ROSSETTI. To address your first question, the answer is "yes." The market is already investing in clean energy and was before the Inflation Reduction Act. Every projection showed that, and you can just look at the investments, and that's where people are going. So I would expect that most of the subsidies in the Inflation Reduction Act are going to go to projects that simply would have happened anyway.

With respect to your second question as to the rising costs of the subsidies, because of the nature of the design of the subsidies in the Inflation Reduction Act, they will simply be claimed if you're eligible, so the more projects that can claim it, the higher the costs are going to be.

So we look at the projections that CBO lays out. You know, they're going to be pretty conservative because they're looking at the EIA projections and these older projections saying, okay, here's where we project it to go. But what we see, and what we've seen historically, is that those projections are usually pretty low. And as we update them, the amount of clean energy that's going into the grid is going up, which speaks to your first question that the market was going in this direction anyway.

And that also increases the costs of the subsidies to the public.

Senator THUNE. Mr. Simmons, in your testimony you addressed competition with China. I think part of competing with China includes leading by example, and operating within multilateral trade and economic frameworks in good faith. What has been the reaction internationally, including our allies in Europe, to the domestic content provisions in the Inflation Reduction Act, and what kind of retaliatory measures should we expect to face?

Mr. SIMMONS. The European Union has been very frustrated with the United States, and because of the complaints that they made, it looks like the Biden administration has watered down some of the implementing regulations. When it comes to retaliatory measures, I don't know; that's yet to be seen.

But one of the challenges is that there's a whole bunch of made in America requirements in the IRA, and those seem to be systematically watered down by the Biden administration so far, though they haven't been finalized yet, because of some criticism that they got internationally.

Senator THUNE. Okay.

Thank you, Mr. Chairman. My time has expired.

The CHAIRMAN. I would just say to my friend, respectfully, my friend says folks on this side are interested in a war on conventional energy. The reason we felt so strongly about this concept of technological neutrality is so that we create an opportunity for all energy sources, and all across the country for people to try to be part of the new market-oriented system and be driven by science. The more you reduce carbon, the bigger your tax savings.

So I'll look forward to working with my friend. I just want to lay out that technological neutrality is very different than a war on conventional energy. With technological neutrality, everybody plays on the same field at the same time.

Next is Senator Cassidy.

Senator CASSIDY. And this is my comment, because technological neutrality, which nonetheless favors a product where the cost is so

high it can never be used, on net has less of a benefit than something which may not be quite as carbon-neutral, but nonetheless is so much less expensive that it's able to be more widely used. And I think we would agree upon that.

And so that sets up my question for Mr. Simmons: the hydrogen credit, which rewards cleaner energy based on life cycle analysis. But in terms of the way that we're developing the hydrogen—low-carbon hydrogen—that's all in the early commercialization stage.

The administration seems to be focused on benefiting green hydrogen, rather than the blue hydrogen which will be far cheaper and more plentiful, even if it is, at the outset, not quite as low in terms of carbon life cycle benefit. So tell me, from your perspective, if we're going to implement a carbon tax credit in a way that promotes growth in the clean hydrogen industry, would you accept my analysis that there has to be some interplay between the expense of the final product, therefore its usefulness, versus maybe the purity of it, but the expense is so high it cannot be used?

Mr. SIMMONS. Sure, and I would add to that—while I was at the Department of Energy, I oversaw the Hydrogen and Fuel Cell Technologies Office—one of the keys to making a hydrogen economy happen is massive amounts of hydrogen. We don't need just a little bit; we need an incredible amount because, with hydrogen, you can do all kinds of things.

You can decarbonize steel, for example. You can achieve much greater decarbonization of the grid. And if we dramatically limit what is available, like the hydrogen that is available with the tightest definition they can put on it, it just makes it more difficult to grow a hydrogen economy.

Senator CASSIDY. And do you know right now, because I think it would be about 3 times, but the cost differential between green hydrogen and blue hydrogen right now?

Mr. SIMMONS. I don't have that number off the top of my head.

Senator CASSIDY. I do think it would be about 3 times, but I can't quite recall that.

Now, as regards our energy policy vis-à-vis China, Mr. Simmons, staying with you. I feel like I'm on a game show. The government is investing heavily to lower the pollution intensity of our energy and manufacturing, that's why we're here today, but clearly if all we do is set up carbon leakage going to China, where energy-intensive enterprises migrate from here to there because they don't enforce environmental regulations, we have on net more global air pollution, if you will, and we also lose our manufacturing base and the jobs that go along with it—and we all want to keep those jobs.

So I'm begging the answer, but is there a global climate benefit to replacing the more carbon-intense Chinese products with a lower carbon-intensive product made here in the United States?

Mr. SIMMONS. Certainly, that is the case, and it is carbon intensity, it is the intensity of other types of—well, it is the intensity of criteria air pollutants, NO_X, SO_X, those sorts of pollutants.

Everything here is done cleaner. It's done more efficiently than it is in China.

Senator CASSIDY. I think I know that 20 percent of the SO_X and NO_X in our west coast—of course, of interest to us all, but particu-

larly to my chair—is blown over by trade winds from China's coal-fired plants on their most eastern coast.

So now, knowing that the strength of their economy is also fueling their military rise and their political, their foreign policy adventures, such as Belt and Road and String of Pearls, would replacing the economic advantage of projects migrating there be an advantage to the United States?

Mr. SIMMONS. Certainly, certainly.

Senator CASSIDY. Okay. Now along those lines—obviously, I'm setting up Dr. Harris. Yesterday before the House China Select Committee, Ambassador Lighthizer expressed his endorsement of a carbon border adjustment mechanism.

My office calls that a foreign pollution fee, and particularly, exactly as I set it up, that strength of their economy that is created by them attracting energy-intensive enterprises, because they don't enforce pollution laws, allows them to increase their wealth.

So as someone who represents U.S. workers and environmental groups, your thoughts in terms of setting up a system which forced the Chinese product to reflect the carbon intensity that they're emitting into the atmosphere, as opposed to the U.S., where we internalize that cost—we add it to the cost of the product, but perhaps create a competitive disadvantage if you only look at price.

Dr. HARRIS. Well, the Inflation Reduction Act is supposed to do exactly the opposite of that, which is pull things back here to the United States and re-shore them.

Senator CASSIDY. It's supposed to, if you will, encourage companies to come back. It seems to do it more by subsidizing the cost of our abatement process, as opposed to penalizing China for their lack of enforcement of an abatement process. And I think that's where a carbon border adjustment mechanism, I think, would force them to—it's the same goal, but it does it by internalizing the cost to their price.

I'm over. Thank you for your indulgence.

The CHAIRMAN. I thank my colleague, and I think my colleague knows I'd be interested in working with him, and any member, on areas like carbon adjustment, because I think that is a border adjustment kind of issue. I do want to say one thing with respect to the history of this bill.

Before we went to markup, because particularly my three senior colleagues—we've worked together, often worked together well. I went to all of the Senators from States with fossil fuels, and I said, "If you all have ideas for reducing carbon emissions in your State, recognizing that you have fossil fuels," I said point blank, "In the name of trying to make this bipartisan, I will try to find a way. We will find a way to get your ideas into the bill."

So that offer is still outstanding, and I look forward to pursuing it.

Senator CASSIDY. And I respect and appreciate that. I will say, the administration is putting in rules that are different than the statutes that we have passed, and that's the frustration.

The CHAIRMAN. The gentleman's time has expired.

Senator Johnson?

Senator JOHNSON. Thank you, Mr. Chairman.

Mr. Rossetti, you talked about the wealth transfer of the Inflation Reduction Act. I want to talk about—you know, we've been hearing an awful lot in this committee about wealthy tax cheats, but the Inflation Reduction Act, it sets up tax credits if you make investments; correct?

Mr. ROSSETTI. That's correct.

Senator JOHNSON. And people who make investments have money; right?

Mr. ROSSETTI. That is correct.

Senator JOHNSON. And the ones probably most likely to make these kinds of investments would probably be the top 1 percent; correct?

Mr. ROSSETTI. That is correct.

Senator JOHNSON. And in your testimony, you say that, on average, people in the top 1 percent will make about $11,000 each from this. I don't know how you got that calculation, but——

Mr. ROSSETTI. That was from economist Jason Furman, who was the Chair of President Obama's Council of Economic Advisers.

Senator JOHNSON. I don't deny that people are tax cheaters, but I think, as is talked about in this committee too often, we're talking about people who actually utilize the provisions in the tax code to incentivize a certain behavior to get tax credits to reduce their tax liabilities.

So that's happening, this thing, and by and large the people who are going to be taking advantage of these tax credits are people who are in the top 1 percent. And by the way, they probably would have been making the investments whether they had the tax credits or not.

Mr. ROSSETTI. That is my expectation.

Senator JOHNSON. Okay.

Mr. Simmons, I think one thing—I know in our budget hearings on environment and climate, we're always talking about the externalities of all these green energy policies. You were talking about how short we are in terms of the minerals we're going to need to accomplish, I would call it the fantasy of green energy, but let's just go through it here.

You said a 42-fold increase in lithium. Is there any way we can mine that amount? And by the way, where is lithium mined, and how destructive is that?

Mr. SIMMONS. So, it is certainly possible. The lithium reserves exist; however, the lithium mines do not, and that is the big difference.

Senator JOHNSON. But where are the reserves?

Mr. SIMMONS. You know, we have a decent amount here in the United States. There's one operating mine. There's another one that's now under construction, but currently the vast majority comes from either the lithium triangle in South America that is Chile, Bolivia, and Argentina, and then Australia.

Senator JOHNSON. What about a 25-fold increase in graphite?

Mr. SIMMONS. Well, I mean China really dominates graphite production currently, unfortunately, but that's just where it comes from.

Senator JOHNSON. Do we have some here?

Mr. SIMMONS. Certainly. And you can produce it synthetically.

Senator JOHNSON. How long does it take you to permit to start mining some of these minerals here in the U.S.?

Mr. SIMMONS. I mean, it is generally over 10 years, and that is a low estimate, because many of the mines are just stuck in forever loops.

Senator JOHNSON. What about a 21-fold increase in cobalt? In the Budget Committee, I had a nice—it's an awful photograph quite honestly—of these thousands of people mining cobalt in the Congo, but a lot of them are children. Where do we get the 21-fold increase in cobalt?

Mr. SIMMONS. It would be difficult. The challenge—I mean, these are commodities. The prices go up and down, and as a result, there is a cobalt mine that is under development in Idaho that recently has shut down, paused operations, because the cost of cobalt has dramatically decreased.

And so, it will continue to be produced by these, what they call "artisanal miners" in the DRC, which include children.

Senator JOHNSON. Of all the investment that we're going to be making in green energy, how much is actually being put into a reliable grid? I mean, one thing I've seen, being chairman of Homeland Security, we're not adequately addressing EMP, we haven't invested the $10–20 billion in purchasing and pre-positioning large power transformers.

If we have an EMP or even a GMD, you'd wipe it out. We certainly saw in Texas, with cold temperatures, that grid shutting down, and I think averting a disaster by hours or days. Renewable energy just makes the grid less reliable, so can anybody answer? I mean, are we doing anything in terms of investing into a reliable grid that can actually handle renewable energy in an efficient manner, because it requires a different type of grid, right?

Mr. SIMMONS. Well, it is—I mean "yes, but" is the answer to that question. Yes, there are billions of dollars; the Department of Energy has billions of dollars to spend on grid development. The challenge is that we need to, according to the National Renewable Energy Laboratory, triple the size of our grid.

We have the grid that we have because we have invested over 100 years to get the grid we have today. And to now, in the next couple decades, triple that just tells you the extent of the problem. And you know, a few billion dollars is nice, but we are talking well in excess of that.

Senator JOHNSON. Well, what about the permitting in terms of transmission lines, that type of thing. I mean, that's a big road block as well.

Mr. SIMMONS. And that is like—the money is one thing. If you can't even get the permits, it doesn't matter if you have all the money in the world.

Senator JOHNSON. Okay.

Thank you, Mr. Chairman.

The CHAIRMAN. Without objection, colleagues, I'm going to put into the record an article from the Associated Press, "U.S. Judge Won't Block Huge Lithium Mine on the Nevada-Oregon Line." And the reason why is, I introduced legislation to promote this kind of work in line with the environmental rules, proving again that we can have an energy policy that is technologically neutral, allows for

a lot of innovation. We're going to do it in line with the environment.

[The article appears in the appendix beginning on p. 80.]

The CHAIRMAN. Next will be Senator Warren.

Senator WARREN. All right. Thank you, Mr. Chairman.

So, there's been a lot of talk here on Capitol Hill for a while about the national debt, and about what is fiscally responsible for our Nation. I'm only talking about something that's fiscally responsible, and that is investing in clean energy.

Last year, Democrats passed the Inflation Reduction Act, which included big investments that will help tackle the climate crisis, lower energy costs, and create good-paying jobs. Once more, it's all fully paid for by making wealthy tax cheats and billionaire corporations pay at least a sliver of their fair share. So of course, House Republicans are demanding that we repeal these and other critical investments, or they will trigger a catastrophic government default.

Dr. Harris, your organization, the BlueGreen Alliance, works with labor unions and environmental organizations, so you know the importance of clean energy investments for both the environment and the economy.

Dr. Harris, do we know how many jobs the Inflation Reduction Act is estimated to create as a result of the investments in climate, energy, and the environment?

Dr. HARRIS. Yes. The report we commissioned by PERI UMass, actually in your home State——

Senator WARREN. Yes.

Dr. HARRIS [continuing]. Said about 9 million, and about 1.7 million of those will be in clean energy.

Senator WARREN. Okay. So about 9 million jobs over the next decade, from a bill that not a single Republican voted for and are now trying to gut. And this bill was specifically designed to bring the jobs where they are needed most.

It contains funding incentives for solar and wind projects that will bring jobs to what are called energy communities, places like Somerset, MA, where the largest and most polluting coal-fired power plant in all of New England, and the last remaining coal plant in Massachusetts, closed for good in 2017.

Dr. Harris, can you explain how these incentives would help communities like Somerset?

Dr. HARRIS. Absolutely. You know, the 10-percent bonus credit for energy communities—which is coal facilities, so coal-fired power plants would count there—is going to drive investment into those communities and allow them to perhaps even repurpose the infrastructure that's already there.

Senator WARREN. Yes. So this incentive is going to help revitalize ports and communities in Massachusetts, and all around the country, by creating good-paying, unionized jobs in clean energy industries, including industries like offshore wind.

Now, rather than breathing dirty air, Somerset will have clean, offshore wind energy traveling via underground cables and connecting to the grid and former coal-powered station, bringing jobs and helping meet the Biden administration's goal of 30 megawatts of offshore wind by 2030.

But folks on the other side of the aisle are targeting their job-killing cuts on these communities that most need these investments. Among their debt ceiling hostage demands Republicans specifically want to axe the IRA incentives for solar and wind projects to build in and to bring jobs to energy communities that need it most.

Dr. Harris, how many jobs are at risk thanks to all of these Republican debt ceiling hostage demands?

Dr. HARRIS. Thank you for the question. Yes, I mean the 9 million certainly, potentially. There is also a Moody's Analytics report that was recently released that said about 780,000 in the next year alone.

Senator WARREN. Wow. Look, Americans deserve a government that invests in them and their kids and their grandkids, not a government that is happy to push the economy off a cliff, and set the planet on fire while they're at it. We should reject these cuts, we should protect our economy from recession, and we should prevent the Republicans from firing nearly 800,000 workers. It's time to pass a clean debt ceiling bill and avoid default.

Thank you, Mr. Chairman.

The CHAIRMAN. I thank my colleague.

Senator Cortez Masto, who did some exceptional work on the IRA with respect to these energy communities, and I thank her for all her leadership.

Senator CORTEZ MASTO. And thank you for your partnership, Mr. Chairman, to the ranking member, and for the benefit of the panel members.

Lithium mines—Silver Peak is in Nevada, and we have potential to mine even more. And I quote this from the Nature Conservancy report that says Nevada has the potential to supply the world with lithium for 85 years at 2021 demands. That's where the lithium deposits are, and that's why it is essential that we continue to support and incentivize that lithium mining.

I agree, we need to streamline permitting, and I have been saying that, and I think there's a way to do that and still protect the environment. We can do that now with the new technology. But let me talk—because Nevada is a mining State, I do want to talk about something that was important for me to put into the Inflation Reduction Act, which was the Mining the Sun provision.

It includes a brownfield provision that makes communities in my State eligible for an energy community bonus. These brownfield areas are lands in Nevada that were developed for industrial purposes like mining. And now we want to turn those into energy-efficient clean energy opportunities for some of my rural communities.

So, Dr. Harris, let me ask you this. Can you speak to what you're hearing as far as to the potential for investments in rural areas, and former mining areas, as a result of this energy community bonus?

Dr. HARRIS. Yes. Thank you for the question. I think Ms. Horvatich even has spoken to this today. What we're hearing is just a massive increase in interest, particularly because of the energy community's bonus credit, and it really helps prepare what was once an industrial site, or mining site, for new investment.

Senator CORTEZ MASTO. Ms. Horvatich, I was in a Banking Committee hearing earlier, so could you expand on this as well?

Ms. HORVATICH. Yes. So I was describing the idled assets that we have in our region. I represent southwestern Pennsylvania, and almost the entire portion of the region I represent is an energy community, so we are definitely impacted by this.

Coal mining is very prevalent there, similar to mining in your State, and we need this tax credit to level the playing field, so we can attract investment.

Senator CORTEZ MASTO. Yes, it is a game-changer for my rural communities, and I hear from across the country, for the same reasons. That's why it was important we put it in the Inflation Reduction Act. Ms. Horvatich, thank you.

One thing I've been closely monitoring and speaking with Secretary Yellen about is making sure the implementation of the energy bonus provides certainty for those installing solar energy. And I understand there's a lot that Treasury is working on right now, but it is important we get this right to capitalize fully on those long-term investments. In your experience in economic development, can you speak to the certainty that businesses are looking for when they look to start a project, a solar energy project?

Ms. HORVATICH. Yes. I actually think it's incumbent upon us, with your help, to make sure that we get the guidance, that we get all the criteria that have to be followed, so compliance can yield the results that we're looking for.

Senator CORTEZ MASTO. And we need it in a timely manner——

Ms. HORVATICH. Yes.

Senator CORTEZ MASTO [continuing]. So we can take advantage of what we have put in this Inflation Reduction Act sooner rather than later, correct, so we don't lose that opportunity?

Ms. HORVATICH. I certainly agree, Senator.

Senator CORTEZ MASTO. I agree.

Dr. Harris, let me ask you this. A recent study published in the *Journal of Environmental Research, Sustainability, and Infrastructure* highlights that rooftop solar panels could power a third of the U.S. manufacturing. The study notes that solar is a viable option because so many manufacturing sites have flat rooftops and expansive facilities that have plenty of room for panels.

This can lower energy costs for manufacturers, making them more globally competitive. So, given the potential for good-paying manufacturing jobs to come back to the United States, what would the impacts be of what I hear on the House Republican side that they want to strip the green provisions out of the IRA?

Dr. HARRIS. Certainly. I think we would stand to lose a lot of those jobs, to really lose the potential to rebuild our American manufacturing.

Senator CORTEZ MASTO. And I do think it is important, as I sit on the Energy and Natural Resources Committee as well, Mr. Chairman, that we also—a lot of the work that we have done in these major investments has put money into building the grid, making sure the grid is strong and reliable and resilient when it comes to this new clean energy source.

I would assume, Mr. Simmons, you do not oppose that investment in a reliable grid?

Mr. SIMMONS. Certainly not.

Senator CORTEZ MASTO. And I agree. And I think that's where we need to be coming together, to continue to focus on how we absolutely lean into this clean energy future to reduce our carbon footprint, and give us opportunities to create great-paying jobs, improve our economy, and let this country lead in this area. And there are so many opportunities from the Inflation Reduction Act that set us on that path, so, thank you.

The CHAIRMAN. I thank my colleague; I mean, having been able to work with her on two committees: the Energy Committee and this committee. What we're talking about is exactly what Harry Reid used to talk about: this Nevada/Oregon alliance.

We're going to tap the opportunity to be energy-independent at home; we're going to have good-paying jobs. And what I was trying to do in my bill—and I think some people in industry were surprised that I took the initiative on it—I said, "Look, we can do it in a way that shows protecting the environment and tapping these energy opportunities are not mutually exclusive."

We're going to do both because of my colleague's leadership, and I thank her for it.

Senator Carper?

Senator CARPER. Thank you, Mr. Chairman. I think I had a chance to personally welcome most of you earlier this morning before the hearing started, but again, welcome. Thank you for joining us.

I represent Delaware. I've been privileged to be the Treasurer, Congressman, Governor, and Senator. I went to Delaware right after the end of the Vietnam War, and moved there, but I grew up in West Virginia. My sister and I were born in a place called Beckley, WV, a coal mining town. And all our aunts and uncles, our grandparents—one of our great, great, great, great-grandfathers was a co-founder of Raleigh County, WV, which is a big coal community.

Some of our neighbors in West Virginia when I was a little boy—and when I would go back and visit our grandparents—they were coal miners, and so were their friends. And there's also a church that's very close to where our grandparents lived. My mother would take my sister and me to go to church when we were little kids, and then later on in life—we actually went back to a family reunion last year.

My whole family went back. There were more people there at that church that day from my family than there were regular members of the church, which is pretty amazing. One of the things my mom wanted to drill into my sister and me when we were kids growing up is the obligation we have—a moral obligation to treat other people the way we want to be treated.

We call it the golden rule. And it's not just a golden rule in West Virginia, or the United States; it's in every major religion in the world. We have an obligation to put ourselves in other people's shoes and think about how we would want to be treated if we were them.

And with that as a backdrop, before my time expires, I just want to say I'm delighted that today's hearing is focused on the impact of clean energy tax incentives that we included in the Inflation Re-

duction Act. And it's an achievement that was only possible thanks to the hard work of this committee and its leadership.

One important goal, as you know, of the Inflation Reduction Act is making sure we don't leave any communities behind as we transition to cleaner energy, including coal mining towns like the one my sister and I were born in, and other communities that rely on fossil fuels for jobs and economic prosperity.

I just came from a meeting of the leadership of the Environment and Public Works Committee, leadership of the Energy and Natural Resources Committee, as we focus on permitting reform—an important conversation that we just concluded. And one of the things we discussed at that informal meeting was whether or not we can address the climate crisis, make sure we create good-paying jobs, clean energy jobs, and leave no community behind in the process, while providing certain predictability for the business community.

That's our goal. And I think it's a good goal, and I think we could do all that when we need to. Part of it depends on the goodwill of the leaders of those committees, and this committee.

A question for Dr. Harris, if I can, and Ms. Horvatich. How would some of the tax incentives in the IRA promote job creation and growth in parts of the country that have historically relied on the fossil fuel industry for economic prosperity?

Ms. HORVATICH. Senator, we have received an increase in inquiries of companies looking at our region because of just exactly what you've said. I do want to just add to what you were saying about the coal communities. I had the opportunity to go into a coal mine when I first entered the profession. I was told, "If you're going to represent southwestern Pennsylvania, you have to go down there and see what coal mining is all about."

So I very much appreciate that these jobs opportunities using other technologies will be given to these coal communities that are feeling it the hardest.

Senator CARPER. All right. Thank you.

Same question, Dr. Harris.

Dr. HARRIS. Yes, thank you. Yes, the IRA has a number of incentives that are doing exactly that. There's the 48C tax credit setaside, there's the energy communities bonus, and we're seeing the real effects, as Ms. Horvatich was saying, already.

I would also say that there's a couple of other items in the bill—some of which are in this committee's purview, but some aren't—that are helpful. There's an investment in the Rural Utilities Service, for example, that I think will be really helpful to coal communities.

Senator CARPER. Thank you.

For both of you: how would our climate goals and economic goals be impacted if investments in the Inflation Reduction Act were repealed? Same two ladies; yes, please.

Ms. HORVATICH. I can answer that by talking about some of the companies that are looking at our regions to explore new technologies, where they haven't been fully developed yet. But they're looking at building pilot plants, and then advancing them to demonstration plants, and then on to full-scale commercialization

where they're able to prove these new technologies and then yield the results of the jobs and the revenue.

Senator CARPER. Good.

Dr. Harris, could you briefly respond to that same question, please? Thank you.

Dr. HARRIS. Yes. I think jobs for these communities is the thing I would lift up the most.

Senator CARPER. All right. Thank you both very much.

The CHAIRMAN. Senator Blackburn is next.

Senator BLACKBURN. Thank you, Mr. Chairman. Thank you, each of you, for being here.

Mr. Rossetti, I appreciated so much the economic analysis that you mentioned in your testimony, and pointing out that JCT originally estimated the cost to be $270 billion, and it has climbed to $570 billion—and then the other research that you cited about the escalation rate on the cost of this. And in Tennessee we talk a good bit about this, the actual cost. People complain about the price at the pump, and of course, we've got TVA, we've got a lot of work we're doing on nuclear.

Our Governor just announced a nuclear energy advisory council this week, a $50-million investment into looking at new ways. And, Mr. Simmons, let me come to you on this, because you talked about grid resiliency. And in response to that, I want to talk about the concerns just a little bit on solar and wind, focusing solely on that, and being able to manage that grid and manage the supply.

Solar and wind do not work for us in Tennessee. We don't have enough heat units per day, and we don't have enough wind. Hydro works, natural gas works, nuclear works, the small modular reactors are showing promise for our industrial areas, but an all-of-the-above process is something that appears to serve us much better. And of course, when you look at the Inflation Reduction Act, it's all about wind and solar.

And so, talk just a little bit on the importance of managing that grid, and having an all-of-the-above strategy to have that, manage that resiliency.

Mr. SIMMONS. Well, one of the challenges of the electrical grid is that supply and demand have to be in balance at all times, or otherwise there are blackouts. And so, it is great when the sun is shining and the solar is producing electricity. It is great when the wind is blowing, and it is producing electricity.

But the problem is that neither of that can be—you know, neither has a switch.

Senator BLACKBURN. Twenty-four seven, 365, yes.

Mr. SIMMONS. And there's value to it, but let's use it where it is the most valuable. Let's use it where it makes sense.

Senator BLACKBURN. And allow people in other areas to move forward with what works for them.

Mr. SIMMONS. Exactly.

Senator BLACKBURN. Yes. Let me ask you this. We've got five EV manufacturers in Tennessee, and so grid resiliency is important, and EVs are important, and I've been quite surprised to see this huge, enormous gaping loophole in the Inflation Reduction Act, in regard to EVs and the $7,500 credit.

It has led to articles titled "How to Save $7,500 on an EV Even if it Doesn't Qualify," and "How to Get a $7,500 Tax Credit on Almost Every EV Lease." And that is language, Mr. Chairman, that needs to be cleaned up, because what we've heard is that the Lincoln SUV is going to be imported from China.

And so, people will be able to exercise that credit on a less-expensive, foreign-made automobile, and run it for the lease, then what are they going to do? They're going to go back to a gas-powered automobile because of cost.

So, have you all looked at this? Are you aware of this? Have you done any analysis on what this would actually mean? Mr. Rossetti, you might have something to say there.

Mr. ROSSETTI. Yes, so when I think about the EVs, I think one of my biggest concerns with the EV tax credit as it was designed is that it is supposed to ostensibly have an income cap, but that income cap is so high that pretty much anyone can qualify. So, if you look at who's buying EVs, it's predominantly wealthy Americans. They're usually owning their own home, and then that's the structure of the subsidy.

But when you look at where you actually want to see more EV utilization, the subsidy is totally divorced from that. It simply rewards people for buying an EV; it doesn't reward them for actually substituting an ICV. And we also have very little potential for benefit for people who might be living in apartments or communal housing.

Senator BLACKBURN. Yes. We hear about that quite a bit from people. There is not the ability to charge, and then of course, when you have the brownouts and blackouts like we had in December, people are quite concerned about what would happen without the ability to get where they need to go.

So, thank you all.

The CHAIRMAN. I thank my colleague. We're going to get all our members in.

I'm going to put into the record at this point that, with respect to technological neutrality, the document that we'll put in ensures that for the first time in history, advanced nuclear would be eligible for the tax incentives.

[The document appears in the appendix on p. 82.]

The CHAIRMAN. Next is Senator Brown.

Senator BROWN. Thank you, Mr. Chairman. I thank you all for joining us today.

The shift away from fossil fuels can be devastating for affected communities; we all know that. We've seen it firsthand in communities across southeast Ohio. Senator Casey sees it in his State.

Folks in Appalachia are used to big-money interests coming in from out of town looking to earn a quick buck, only to leave communities holding the bag. I wear on my lapel a depiction of a canary in a bird cage, given to me by a steel worker about worker safety, and the vulnerability of these communities, and the vulnerability of workers working in various kinds of jobs.

A union mine is closed for non-union mines; too often coal mines move to the West. Natural gas came in with promise and potential. Whether it's solar, wind, or natural gas, people in Ohio want a good-paying job where they can care for their families.

I've worked over the years with Senator Casey and Senator Warner and Senator Manchin and others to save the pensions of the UMW workers. Coal miners powered our Nation; they fueled the blast furnace that propelled our economic growth and helped electrify our Nation.

We have a sacred obligation to them. Having to step up and rescue that pension plan from the brink of collapse—and it would have collapsed—shows you how intertwined our energy policy is with worker's economic well-being. Coal miners had a pension because they had a union there to fight for them.

It's our responsibility to make sure that communities affected by shifting from coal to natural gas and other alternative energy sources have the support they need to succeed. The Inflation Reductions Act's energy communities bonus credit is one tool to help with that.

My question is, Dr. Harris, the purpose of this tax credit is to drive investment to energy communities to make the investment worthwhile in a place that they might not initially consider. Is this credit sufficient to drive that investment to Appalachia, Ohio? If not, what more should we be doing to make sure that we're creating good-paying union jobs in a place where they've been lost?

Dr. HARRIS. Thank you for the question, Senator. I think we'll need that tax credit, the other provisions in the IRA that are targeted to energy communities, and honestly more. We need a whole-of-government approach to keep these communities and workers safe and whole, and we need to align our Federal investment and our State investment, and make sure we're coordinating to make that happen.

And lastly, I would say that those workers need wraparound supports in order to make sure that they can actually transition into new jobs and support their families.

Senator BROWN. And I thank you, Dr. Harris. And doing that means putting workers at the center of this policy. Explain to us why the IRA's steps to onshore manufacturing—again, something my colleague from Pennsylvania has led on—are good for climate goals, and how that helps American workers.

Dr. HARRIS. Sure. Yes, but the IRA's investments to make clean energy components can actually cut industrial emissions, which are a leading source of climate and air pollution, while also building reliable supply chains here at home.

Senator BROWN. And when we talk about just transition, it's so important to realize that training alone will not work unless there is investment. I think we have unfortunately—more than we, workers have learned that in a painful way in the last several years.

Last question—and thank you again, Mr. Chair—to Dr. Harris and to Ms. Horvatich.

What in your experience does it take to make sure these communities are organized and prepared to take advantage of the Department of Energy loans and the tax incentives we've provided, and is there more to do? Ms. Horvatich, if you would start.

Ms. HORVATICH. Yes. There is certainly more to do. We need to make everyone aware of the tax credits and sit down with and work with them on the time frame so that they can actually yield the results from them. So it's information, education, timeline—all

very critical factors in making sure that the complete benefits of the plan can be realized.

Senator BROWN. Dr. Harris, any other comments?

Dr. HARRIS. Yes. In addition to the information, I would also say technical assistance and capacity building are really important for these communities. That can be done through partnerships, potentially with unions themselves, or other local governments.

Senator BROWN. Thank you.

The CHAIRMAN. I thank my colleague, and I know he's juggling a lot today, but it's been particularly important for this member of the Senate to work with you on solar manufacturing. And Ohio investment levels are at $7.8 billion. You led the fight here in the committee to do that.

And I think the point really is—and we had this debate, you know, on the floor. We understand that there are jobs in a variety of areas with respect to renewables. We get that, but right at the heart of our competitiveness for the long term—as you have said, and Senator Casey has said for so long—is ensuring that we have more opportunities for manufacturing.

So those provisions are in this bill because of the effort that the committee made, led by Senator Brown, and we appreciate it.

Senator Casey?

Senator CASEY. Thank you, Mr. Chairman. I want to thank Senator Brown for his questions and also his references to my home State of Pennsylvania. I wanted to start with, I guess, similar to what Senator Carper did, a little bit of family history, with the indulgence of those here.

I come from a part of Pennsylvania which mined anthracite coal for many generations. I lived in Scranton, Lackawanna County. It's one of just a handful of counties that have produced anthracite, which is so-called hard coal. Patty Horvatich knows it. In the southwest, it's bituminous coal, so-called soft coal.

And my own family had direct experience. I never had the opportunity to meet my paternal grandfather, but he was, like many children at the time, thrown into the work of a coal mine in 1905. In fact, his father died in May of 1905 at the age of 35. My grandfather was only age 11, and he went right into the coal mines, because the son would replace the father, and it wasn't optional. It was mandatory for the family.

So he worked in the coal mines for about 5 years, starting at age 11, and that was not atypical. That's not some unique story; that was commonplace. So the connection to coal mining is both personal, as well as a Pennsylvania story and a Pennsylvania connection.

Coal mines, as we all know, and power plants made our country's industrialization possible. We wouldn't have been the economy we've been without their contribution. Once these mines and the workers had the benefit of a union, these jobs provided good-paying benefits to workers without a college degree so that, even though the economy was changing, and technology was, these workers had a chance to make a living and support their families. Now, as further change has taken place, we've just taken away the original source of the vitality in those communities.

Coal communities are both uniquely qualified for these new energy jobs, as well as in need of them. The workers in coal communities powered our Nation once, and they can do it again with new technology and new approaches. So that's why I fought for the tax credits that are in the Inflation Reduction Act to encourage private companies to build new energy and manufacturing projects in these coal communities.

Patty, I only have time for one question because of the crazy schedule on a Thursday, but in your experience, what are the unique challenges facing coal communities that want to attract this new business investment?

Ms. HORVATICH. I think, Senator, that the unique challenges of the coal communities fall into both people and place. And I particularly want to call attention to place, which I have done a little earlier today. These plants—you know, you drive up to them, and the gate is there. You see the cooling towers, just abandoned.

These very large industrial sites, assets for the region, are just shuttered. We need some remediations, demolition, to breathe new life into these communities, so that's the place part of it. But then, when you look at the people, some of them are unemployed, these hardworking, talented individuals, and you know, they're looking for family-sustaining wages.

They don't know if they're going to have to uproot their families and go elsewhere because of these closures.

Senator CASEY. Yes. Well, I appreciate the work you've done, and also, I appreciate the work of the panel.

Mr. Chairman, I've got to run, but thank you for the time.

The CHAIRMAN. Thank you for all your leadership. Energy communities were really defined by you at the outset, and so we appreciate your doing that.

Senator Tillis is next.

Senator TILLIS. Thank you, Mr. Chairman. Thank you all for being here.

I participated last night at a bipartisan session on energy transition, and it reminded me of my first foray into this. Shortly after freshman orientation, when I entered the legislature in North Carolina in 2007, the Democrats, who didn't need a single Republican vote, were about to pass a renewable portfolio standard that would have been devastating to the State of North Carolina.

So even as a freshman, I walked across the aisle and said, "Are you all willing to negotiate something that will achieve great progress?" As a result, we took a 25-percent renewable portfolio standard that no one could have achieved, to a 12.5-percent renewable portfolio standard, the first in the Southeast, which has done extraordinarily well.

And in fact, we are only behind Texas and Virginia in having the lowest commercial industrial rates in the Nation, so it's no wonder, that that's at least one reason why we're also one of the fastest-growing and most economically viable States today. Now let's talk about the Inflation Reduction Act.

Not everything in the Inflation Reduction Act is bad, but I think their green energy strategy has a lot of missing blanks, or they have blanks where we need a strategy. Mr. Simmons, in your opening comments you talked about transmission. I think that we've got

a problem with transmission—generation, transmission, and distribution.

We did not thoroughly look at that. We're not looking at the investor-owned utilities, and those who are generating. We didn't have them at the table like we did—and incidentally, the renewable portfolio standard in North Carolina was endorsed by the environmental groups and the investor-owned utilities. It's clear to me that there wasn't a lot of consultation with companies whose businesses are on the line by satisfying their baseload requirements.

We don't know what baseload is going to look like if we fully implement this. We don't know what the demand is going to be. We don't have distribution mapped out for the people who want to recharge vehicles. There are just so many things that were poorly thought out that are why the current policy is doomed to fail, or certainly not exceed the outcomes that it could have otherwise, with simply not taking a partisan path.

And if I were back advising clients on major corporate capital expenditures who say, you know, how do we move ahead and become a part of this, I'd tell them not to. Why? Because I would be telling them we've got political uncertainty. What if, for example, next year Republicans take a majority in the Senate and the House, and a Republican wins the White House?

What do you think the first reconciliation bill looks like? It looks a lot like undoing everything, including some of the good portions in the IRA. So how can any business—by virtue of the way that it was passed, and by virtue of all of the unanswered questions that relate to risk, capital is sitting on the sidelines. Responsible organizations are sitting on the sidelines because they don't have certainty. You're not going to make a 10- or 15-, 20-year capital expenditure decision in the wake of all the uncertainty that I could rattle off in 2 minutes in a board room.

And it's a shame because, just like the RPS negotiations we did on a bipartisan basis, that was a great opportunity lost because we didn't come to the table and negotiate something that we know is going to be sustainable.

I can't be 2½ minutes over on my time. I think it carried over from Senator Casey's.

Okay. I know I talk a lot, Mr. Chair, but I thought I'd——

The CHAIRMAN. The gentleman from North Carolina has 2½ minutes left.

Senator TILLIS. Okay.

And by the way, Mr. Rossetti, I should also say that my staff have a lot of praise for you and working with my office. We appreciate your insight, so I do want to take time to ask just a couple of questions.

But, Mr. Simmons, I don't think that the end goal is a bad idea. But I think we're betting on some technologies. We're burdening the costs of these technologies because of labor priorities, in one case. We're discounting the value of the investment that we're willing to make. We're not thoroughly thinking through the entire value chain from generation to distribution. Do you agree with that, or what have I missed?

Mr. SIMMONS. Oh no, I definitely agree with that, because there is certainly political uncertainty. That doesn't mean that there's not a large amount of investment that is currently happening. It is that there is, you know, when you——

Senator TILLIS. I'm talking about the long-term return on that investment, I mean.

Mr. SIMMONS. Well, that is a fine question. As Mr. Rossetti has pointed out numerous times, much of this investment is going to people who would have made those investments anyway, and that means there is a very low return on that.

Senator TILLIS. Exactly. When we were doing the renewable energy credits, we said we want to allow for innovation. We want to see if we can make hog waste to energy a going concern, but we had certain windows on how long you could prove it out before we went to something else based on advances, so it was constantly going back and rethinking it.

And if you couldn't produce something that looked like it was going to be commercially viable, and fiscally sustainable without government subsidies, then the clock was running. Then you move on to the next one. You stimulate that flow and that innovation that's going to be critically important.

Some of the things that are going to be necessary to achieve what the Democrats want to achieve—and I agree with them—we don't even know about yet. And so, I think we've got the timeline wrong, we've got—we have set up, I think, ourselves for failure. If it's judged by what the Democrats thought they were going to achieve with the measures in the IRA that relate to energy, I think it's a great opportunity lost. And I hope that we can look ahead, and if the political landscape changes here, I hope cooler heads will prevail, and then maybe we can not break what's okay in the IRA, but recognize there's a number of other things that have to be done, and we all want to achieve the same goal.

How anybody would think that we don't want to have a significant amount of our energy in renewables, modern and nuclear—it's silly. Nobody is thinking that way. The argument has to do more with the method, the technique, and the execution, and I hope we can have a discussion about that, so that we can get this right.

Thank you, Mr. Chair.

The CHAIRMAN. I thank my colleague. And just to respond very briefly, I share his view with respect to transmission. I mean, when we marked up this legislation that eventually became law, we got close to 90 percent of our original bill. What we did not get was the expanded transmission, and we will be back working in a bipartisan way on that.

But I want to take the strongest possible exception to my friend's comment that had nothing been done, the results would have been the same. And what our guest from southwestern Pennsylvania has said when I asked point-blank that question, she said that wasn't the case. There's more interest.

She's got opportunities that she didn't have before. And let the record show that the witness that said it earlier just nodded her head, and reaffirmed her earlier statement on that point.

Senator TILLIS. Mr. Chairman, I agree. I may have been misunderstood. What I would like is to have a policy that even has

more good stories to tell, and more opportunities, and I think that's what's been missed.

The CHAIRMAN. You got me at "hello" on that, and I will just wrap up. I say to my olleague, when we talk about game-changing aspects of what we've done, the technological neutrality standard that we established in this bill makes sure that, because nobody really knows what the big carbon reducers are going to be 15–20 years from now—something thoughtful people on both sides of the aisle said—we established technological neutrality. And then we said here's where we all want to go. We all want reduced carbon emissions, and for the first time we said in this committee, 100 years, the more you reduce carbon, the bigger your tax savings. So there are transformational elements in this. I appreciate my colleague's last statement that he wants to build on some of the features in the bill. We'll work with him to do that.

I thank my colleague from North Carolina.

The Senator from Maryland.

Senator CARDIN. Thank you, Mr. Chairman.

First, I just want to underscore the importance of the Inflation Reduction Act as it relates to America's future. It's critically important for our environmental responsibilities, as a global leader, to deal with the realities of climate change. It's critically important in regards to energy security issues. We can be the world leader in green energy, and that helps us deal with a lot of our security issues. And clearly, it's where the jobs are going to be in the future, and America's competitiveness depends upon us being ahead of the curve.

And just to underscore that point, Mr. Chairman, when I was attending the climate meetings in Sharm El-Sheikh and talking to our traditional allies, they were complaining. They think we're being too aggressive in this area. They don't think they can compete with us, so that's good news. So we are doing the leadership.

I want, Dr. Harris, to take this from a different perspective, and that is dealing with the challenges that we have in vulnerable communities from climate change.

I represent Maryland, and we have certain communities that are more vulnerable than others, and they happen to be usually minority communities, or lower-income communities. So to me, there's an equity argument in regards to our aggressiveness to deal with green energy to help those communities that have been most vulnerable and don't have the same degree of capacity to deal with the realities of climate change.

So, the faster we can deal with this, the better it's going to be on those impacted communities. Your views?

Dr. HARRIS. Yes. I think that's right, and I think that's why there are things like the low-income communities' credit in that bill. It would directly drive investment towards those kinds of communities.

Senator CARDIN. And, Ms. Horvatich, I want to talk a little about Pittsburgh, because I went to school at the University of Pittsburgh in the 1960s.

Ms. HORVATICH. Hail to Pitt.

Senator CARDIN. Yes, hail to Pitt is right. But it was a different climate there in the 1960s. We had some good jobs at the steel

mills. They're no longer there, but we recognized that the economic future of many communities is very much impacted by whether we can adjust to the realities of new opportunities, and green energy is an area of new opportunities.

I represent the western part of our State, and some people think they're in Pittsburgh, in Pennsylvania, but they're in Maryland, and the Appalachia region, and they're really looking forward to a green energy future for their economy.

So how do we use these tools in the Inflation Reduction Act to help adjust communities that need economic opportunities that in the past may have depended upon fossil fuels? Western Maryland had coal, and coal no longer is what it was before. Pennsylvania of course, had coal, and still has coal.

But how do we target it to help those communities that are most in need?

Ms. HORVATICH. Before I answer that, I just want to add that we haven't really talked about it today, but I think one of the reasons we're seeing such an increase in inquiries for these energy communities is because companies are feeling some social responsibility these days, and they're being held accountable for that. So that's why they're particularly looking at communities that need help the most.

With reference to your question, the inquiries that we're receiving are in energy production, they're in energy storage, particularly batteries, so having these communities be upskilled, to be retrained to be able to handle those new jobs, is what will make it successful.

Senator CARDIN. Thank you.

Thank you, Mr. Chairman. I yield back.

The CHAIRMAN. I thank my colleague.

Senator Whitehouse?

Senator WHITEHOUSE. Thanks very much.

Dr. Harris, can we ever achieve energy independence with oil prices set by a foreign cartel?

Dr. HARRIS. Admittedly, I did not prepare for that question, but I think we can all agree that the investments in the IRA are a good thing.

Senator WHITEHOUSE. And you're not exactly an independent energy source if foreign governments and cartels set your price, it just seems to me. And we've lived that fairly recently when Russia invaded Ukraine and international oil prices jumped, and America's big oil companies had the choice to keep pricing their oil sold domestically the way they did, or to ride along with the foreign cartel and seize massive excess profits. And we know what choice they made. They went with the cartel, and they took massive excess profits out of the public.

We've had some criticism of the IRA in the hearing today that it was inclined to encourage jobs, mining production, whatever, in China. You called the effort to repeal the IRA the Ship U.S. Jobs Overseas Act. Could you explain?

Dr. HARRIS. Yes. Absolutely. I mean, one of the goals of the IRA is to actually bring jobs back here, particularly into energy communities, but also to rebuild our manufacturing, to re-shore supply chains. And all of that brings jobs with it as well, so that's why we refer to it as that.

Senator WHITEHOUSE. Yes. And in fact, in addition to what the expectations are, we're already seeing it. I had dinner with a major utility executive, CEO, not too long ago, and they've gone from retiring nuclear plants to going on a hiring binge for nuclear engineers because of the way the bill turned around the nuclear energy and also opened the door for new, clean, safe nuclear technologies.

I looked closely at offshore wind because Rhode Island was the original place where we figured out how to site offshore wind farms, and the IRA threw a huge lifeline to the struggling offshore wind industry. Solar and battery investments have leapt up. Carbon capture and green hydro are both moving forward with dramatic new vigor.

And if you doubt me, one of the things I'd like to do—and, Mr. Chairman, I'd ask unanimous consent to put this document into the record.

The CHAIRMAN. Without objection.

[The document appears in the appendix on p. 69.]

Senator WHITEHOUSE. But I have a number of statements that were made by House Republicans, who voted against the IRA and voted for repealing it, back in their home districts, celebrating the projects going forward in their home districts because of the IRA.

"Largest investment in Georgia's history, thrilled that Honda has committed to Ohio."

"Thrilled to welcome ENTEK to the Hoosier State, honored to stand with State and Federal leaders during this first solar energy microgrid-powered industrial site project."

So the IRA seems to be working extremely well, and Republican House members seem to be noticing it, at least in their home districts. So, I couldn't agree with you more, Dr. Harris. We're going to try to keep the pedal to the metal.

I'll make one last point, because Senator Cassidy raised this earlier, but I am a wholehearted supporter of carbon border tariffs. I think that there can be bipartisan support for them, because they provide huge advantages to the domestic steel, aluminum, pharmaceutical, and cement industries.

The European Union is going ahead with its CBAM. I'm repeatedly assured that they are not going to back down, they are going with it. We will have to pay those tariffs if we don't get a carbon border tariff of our own to compensate. Even if we just have to pay the tariffs, we still have big jobs and economic wins in steel, aluminum, cement, pharmaceuticals, and other industries, so it's a winner, even when we're losing.

And if we neutralize the tariff by doing a responsible carbon border adjustment of our own, then it's all good. And in particular, what's important about it is that it's the only real pressure point that we have that China will take seriously, as China has become the biggest greenhouse emitter on the planet.

When you put a big price signal on their bad pollution behavior, they will correct it. If all you're doing is scolding them, it is not going to make a big difference. So I appreciate very much Senator Cassidy's leadership on this, and I was grateful to hear you, Mr. Chairman, say that this was an issue that interested you as well, and we look forward to continuing our work together.

The CHAIRMAN. We will, and we thank you for all the time you put in, all the sweat equity, on these issues. And you just outlined what amounts to a market-oriented, competitive case for a border adjustment effort, and you know——

Senator WHITEHOUSE. Mr. Rossetti might like it as a market-based response.

The CHAIRMAN. There you are. All right.

Senator Bennet?

Senator BENNET. Thank you, Chairman Wyden; I appreciate it. Thank you to the witnesses who are here for joining this incredibly important discussion.

By the end of this decade, Moffat County in northwest Colorado expects to lose over half of its property tax base due to the announced closure of Craig Station, a 1,280-megawatt coal-fired power plant, and also related economic repercussions in the neighboring community of Hayden, where a 440-megawatt coal-fired power station will also close.

And because of these closures, these incredibly important Colorado communities' core public services—schools, hospitals, police, and fire districts—are now threatened. As I visited these communities throughout the years, I've heard concerns about what these closures mean for businesses and for their way of life.

And I think it's critical that we provide the tools and resources to support these communities before they face economic crisis, and help ensure as smooth a transition as possible. We can't solve everything overnight, and obviously it's going to take multiple tools to be able to provide the support these communities need.

And I'm encouraged that this year Congress finally passed meaningful legislation, including the Inflation Reduction Act, with specific investments in energy communities like those in northwest Colorado.

So, I would just ask Dr. Harris—I should have said this first, I suppose, to give you fair warning—but what else do you think we could be doing to better support communities like Craig and Hayden, in northwest Colorado?

Dr. HARRIS. Thank you for the question, Senator. And yes, Colorado is probably one of the leading examples of energy transition here. You know, there are multiple investments in the Inflation Reduction Act that do help. I think I would lift up a bill that you yourself have introduced, the National Energy Community Transition Act, which is really intended to help support communities, like Craig, that have lost their economic base.

Senator BENNET. I appreciate your mentioning that. Actually, I'm glad you did, because that bill was written in northwest Colorado, and I hope that at some point we're going to be able to get it passed around here.

I would also just have one other question before we close. Colorado is, as you know, all of you know, a national leader in clean energy. And finally, with the Inflation Reduction Act, Washington is actually doing something to help. And we're now going to accelerate our energy transition. We've already seen new investments in the State since the bill passed.

That includes at least seven new solar and energy storage projects located in energy communities. That includes projects from

Moffat to Mesa to Las Animas to Montezuma, and a $5-billion investment in wind manufacturing in Pueblo. That's thousands of new jobs in some of the places in Colorado, as we were just talking about, Dr. Harris, that need jobs the most. And what's more, power companies in my State with announced coal plant closures are telling me the provisions in the legislation will be critical to helping them repurpose this asset.

So, Mr. Rossetti and Mr. Simmons, these energy communities are not only in Colorado, they're also across other parts of rural America, from Wyoming to Montana to South Dakota. And yet, not only have I not seen any specific proposals from people who want to get rid of this legislation about these regions, I think that we're seeing, in the House, active efforts to actually strip away the supports that are there for the kind of States in the region that we're talking about. And I just want to ask you whether you think stripping away these investments is going to be useful to these regions that have powered our country for decades, or is it going to hurt these communities?

Mr. SIMMONS. Oh. You know, one of the concerns—there is no doubt that having tax bonuses is valuable. My concern with the energy community, the way that it is written, is that it leads to some weird outcomes where you have similar-situated communities that seem similarly situated, but some receive the tax credit, but some don't.

A place like Craig, CO—I've been to Craig. That breaks my heart that so many people will lose their jobs there, and if the tax credits are valuable, I think they should be widely applicable.

Senator BENNET. Well, we're going to make sure people aren't going to lose their jobs there, but go ahead, finish your thought.

Mr. SIMMONS. Just that. But if they are valuable, I believe, just in the general rule of thumb, as widely available as possible.

Senator BENNET. Mr. Rossetti, do you have a comment about this?

Mr. ROSSETTI. Yes. So, whenever we look at a tax credit, there's no doubt that it's going to benefit someone who claims it, but the question is, as opposed to what other policy?

So, when we look at the Inflation Reduction Act, my big concern is we probably could have got a lot more benefit, and got a lot more emission abatement and helped these specific communities, with more refined policy that's targeted towards the barriers to market entry and capital investment, rather than just saying okay, we're going to have a new tax, and then use that to pay for additional subsidy.

Senator BENNET. Okay. Thank you.

Mr. Chairman, thank you for holding this hearing, and I will get out of your way.

The CHAIRMAN. I thank my colleague for all his years of leadership.

I'm going to liberate all four of you very briefly, because you've been very patient. And there's been mention of the fact, well, you could probably have had the same thing if you had done nothing.

Let me just very briefly tell you what things used to be like, because for places like southwestern Pennsylvania, they were the essence of uncertainty. What the Congress lived by was something

called a tax extender, which is a short-term approach that very often involved passing extensions of existing tax law with a shelf life around the same as a carton of eggs.

And I remember once it was done, and our family went on vacation—beautiful central Oregon—I had a town meeting when I was there. People thanked me for a tax extender, and I had to tell them it had already expired by the time there was a town meeting. So this is a new day, folks.

What we said, after 3 decades' worth of gridlock, was that we were going to try something very different. Instead of a system of these tax extenders, which basically meant that if somebody had a friend who knew a friend who knew someone on the Ways and Means Committee in the House of Representatives, or same with respect to the Finance Committee, they could get a tax break.

And it was the opposite, it was the antithesis of what I think the country understands is necessary, which is to have something that is simpler, focuses on markets, is science-driven, as we're dealing with the concept of technology neutrality. And I'm just going to wrap this up by saying to Senator Casey's witness, I think what this spells is that we've got a lot of work to do for energy communities like yours, but it's going to be a new day.

And I think it's only fitting that I give you the chance to have the last word, Ms. Horvatich.

Ms. HORVATICH. Thank you, sir. So I wholeheartedly agree with you. I applaud the Federal initiatives that are being proposed here today. I would add that it's going to take even more. I applaud our State and our new Governor for his new Offices of Infrastructure and Transformation and Opportunity.

We have to work together to accomplish these goals. It's not going to get less expensive to help these towns, and it's not going to help these people to be unemployed for longer periods of time.

The CHAIRMAN. I thank all of you.

Questions for the record, for the Senators, are due 1 week from today. I thank our four witnesses for sharing their expertise on a quite lengthy hearing.

With that, the Finance Committee is adjourned.

[Whereupon, at 12:42 p.m. the hearing was concluded.]

APPENDIX

ADDITIONAL MATERIAL SUBMITTED FOR THE RECORD

PREPARED STATEMENT OF HON. MIKE CRAPO, A U.S. SENATOR FROM IDAHO

Thank you, Mr. Chairman, for holding this hearing.

Many members of this committee, on both sides of the aisle, have long recognized the need to reform our energy tax laws. But rather than work on stakeholder-informed, bipartisan energy tax policies that would support a technology-neutral approach, my Democratic colleagues pursued a partisan path through their misnamed Inflation Reduction Act (IRA).

Republicans warned that the IRA would take us down a dangerous, fiscally irresponsible path to provide ever-ballooning subsidies, antagonize allies, and ironically, reward the very industries that are reliant on China. Unfortunately, what we warned of has to come to pass, leaving Americans to deal with the fallout of these predicted consequences.

The IRA's costs keep rocketing upwards by hundreds of billions of dollars. For example, Penn Wharton's budget model originally estimated the climate and energy provisions in the IRA would cost nearly $385 billion. After new implementation details emerged, Penn Wharton revised the model, estimating the climate and energy provisions would actually cost over $1 trillion.

Spending on clean cars and trucks alone is now estimated to cost $393 billion over 10 years—more than the original estimate for the entirety of the IRA's energy and climate-related provisions.

To mitigate our allies' anger on electric vehicles tax credits, the Biden administration decided to usurp congressional authority by redefining the long-understood concept of a market-oriented "free trade agreement" to now include agreements that fail to open any markets for American workers.

Additionally, the Treasury Department has announced several sets of rules and planned rules that will enable Chinese minerals, materials, and entities to qualify for IRA subsidies, while potentially also excluding domestic players who are connected to traditional energy sources.

Meanwhile, the taxpayers who bear the cost of this government largesse still suffer from inflation that remains far too high. People who find they can no longer afford much of what they once could are forced to fund green energy subsidies that do nothing to help reduce inflation, but are likely to make it worse.

The rushed, disjointed policies at the heart of these provisions were unworkable from the outset. The Biden administration has resorted to unilaterally walking back and diluting key guard rails at every opportunity. The result of the administration's actions, however, will support manufacturing jobs overseas and cede additional control of our supply chains to foreign competitors, as even some of my colleagues across the aisle have acknowledged.

In the interim, the IRA fails to provide any real permitting or regulatory reforms, which leads to widely disparate results—even for the same exact types of projects. Projects that would already be economically viable receive a subsidy windfall under the IRA, but those projects which may have existing regulatory or permitting roadblocks receive insufficient benefit to move forward.

Meanwhile, American taxpayers are left footing the direct and indirect costs of the trillion-plus-dollar bill. And while many U.S. companies and American consumers are at a disadvantage under the new green energy regime, there is one clear winner: China.

When it comes to producing batteries for electric vehicles, for example, China is the economic winner by a landslide. China controls more than 60 percent of the battery cathode and separator production, more than 70 percent of battery electrolyte and battery cell production and lithium and cobalt refining, and more than 80 percent of battery anode production.

The New York Times recently reported, "Despite billions in western investment, China is so far ahead—mining rare minerals, training engineers, and building huge factories—that the rest of the world may take decades to catch up. Even by 2030, China will make more than twice as many batteries as every other country combined."

China's production dominance is also on display in the solar industry which, as *The Washington Post* recently noted, "dominates the market for the wafers and polysilicon used in them, controlling some 95 percent of the supply."

The IRA is a gift to China, where economies of scale, supply chains, and first-mover advantages—as well as the unreasonably lenient Treasury regulatory guidance I previously referred to—ensure that, for the foreseeable future, most of America's green energy growth will be originating from the one place the IRA claims it should not.

Instead of increasing U.S. dependence on China and further encouraging manufacturing overseas, my Republican colleagues and I support a common-sense all-of-the-above approach.

We also share Americans' justified concerns with the forced shift to certain types of green energy that the administration's broad-based effort to eliminate traditional energy sources will lead to.

I look forward to hearing from our witnesses today about the actual outcomes of the IRA's green energy subsidies.

Thank you, Mr. Chairman.

ASSOCIATED BUILDERS AND CONTRACTORS

May 17, 2023

The Honorable Ron Wyden
Chairman
U.S. Senate
Committee on Finance
219 Dirksen Senate Office Building
Washington, DC 20510

The Honorable Mike Crapo
Ranking Member
U.S. Senate
Committee on Finance
219 Dirksen Senate Office Building
Washington, DC 20510

Chairman Wyden, Ranking Member Crapo, and Members of the U.S. Senate Committee on Finance:

On behalf of Associated Builders and Contractors, a national construction industry trade association with 68 chapters representing more than 22,000 member companies, I appreciate the opportunity to comment on the committee's May 18, 2023, hearing, "Tax Incentives in the Inflation Reduction Act: Jobs and Investment in Energy Communities." ABC remains concerned that the enacted energy tax credits include burdensome and discriminatory prevailing wage and apprenticeship requirements that will limit opportunities for many construction apprentices in nonregistered programs. These requirements will also place a strain on developers and contractors grappling with a shortage of more than 500,000 workers in the construction industry in 2023 alone.

As Senator Crapo noted in a May 2021 committee hearing, "Linking labor policy to energy-related tax credits is unprecedented, and I have concerns not only about the policy, but also about the dangerous precedent it sets for amending the tax code." Now that these tax provisions are going into effect, we expect to fully realize the burden of the new requirements on the construction industry soon.

Critically for ABC and the construction industry, this bill penalizes employers that believe in fair and open competition and pay wages based on experience, quality and

market rates and limits opportunities for thousands of construction workers and industry-recognized apprentices. It provides increased tax credits for private employers that comply with Davis-Bacon prevailing wage requirements and government-registered apprenticeship labor-hour quotas ranging from 12.5% to 15% of total labor hours, depending on the year of qualifying construction projects. This is an unprecedented expansion of Davis-Bacon and government-registered apprenticeship requirements on private construction projects.

Also concerning to the construction industry is the Biden administration's pursuit of a new rule affecting prevailing wage rates that fails to fix the unscientific wage determination process, rescinds modest pro-taxpayer reforms that have been in place for nearly 40 years and increases regulatory burdens on small businesses, new industries and additional public works projects.

Further, the government-registered apprenticeship system is woefully inadequate to meet the increased demand for construction workers generated by these tax incentives. According to ABC's analysis of recently released U.S. Department of Labor data, it would take 12 years for all government-registered apprenticeship programs to educate the more than half a million workers the construction industry needs to hire this year.

ABC estimates that the construction industry's federal and state registered system yielded just 45,000 completers of four to five year apprenticeship programs in 2022, and just 250,000 apprentices were enrolled in all construction industry registered apprenticeship programs.

As the construction industry continues to face supply chain delays, high materials and gas prices, workforce shortages and an overly burdensome regulatory environment, ABC believes that the anti-competitive policies included in the IRA will continue to handicap open shop construction contractors and jeopardize the nation's energy projects at this critical time.

To effectively unleash America's energy potential and build the necessary infrastructure to support the IRA's clean energy goals, we must award construction projects through fair and open competition from all of America's construction contractors and allow our entire qualified workforce to participate in these projects across the country.

Sincerely,

Kristen Swearingen
Vice president
Legislative and political affairs

PREPARED STATEMENT OF KATIE HARRIS, PH.D.,
LEGISLATIVE DIRECTOR, BLUEGREEN ALLIANCE

Thank you, Chair Wyden, Ranking Member Crapo, and members of the committee. My name is Katie Harris, and I am the legislative director at the BlueGreen Alliance (BGA). The BlueGreen Alliance unites labor unions and environmental organizations to solve today's environmental challenges in ways that create and maintain quality jobs and build a stronger, fairer economy.

At BGA, it's our belief that we don't have to choose between good jobs and a clean environment, we can and must have both. The Inflation Reduction Act's landmark investments can help turn this belief into reality. With strong implementation, the law will reduce emissions up to 42 percent by 2030, support cleaner air and water, and create good-paying, union jobs.[1]

The world's leading scientific organizations have been unambiguous that climate change is a dire and urgent threat. Over the last decade, we have witnessed worsening impacts on our communities. To avoid the catastrophic consequences of climate change, we must ensure rapid greenhouse gas emissions reductions—based on the latest science and in line with our fair share—to put the U.S. on a pathway of

[1] Rhodium Group, *A Turning Point for US Climate Progress: Assessing the Climate and Clean Energy Provisions in the Inflation Reduction Act,* August 12, 2022. Available online: *https://rhg.com/research/climate-clean-energy-inflation-reduction-act/*.

reducing its emissions to net zero emissions by 2050, and to ensure we are solidly on that path by 2030.[2]

At the same time, our Nation is struggling with deep economic and racial inequality. According to the Economic Policy Institute, "the bottom 90 percent of the American workforce has seen their pay shrink radically as a share of total income," from 58 percent in 1979 to 47 percent in 2015. That is almost $11,000 per household, or $1.35 trillion in additional labor income. There is a direct correlation with the decrease of worker power over this time, as the share of workers in a union fell from 24 percent in 1979 to under 11 percent now.[3]

These impacts are also not felt uniformly. For generations, coal-dependent areas built their economies around coal, not only for the employment of their citizens, but for the revenue that supports their schools, infrastructure, and small businesses. As demand for coal decreases, these communities face an uncertain future. Because these regions are often geographically isolated and coal facilities are frequently a primary direct and indirect employer of workers across multiple counties, the economic and social infrastructure of a region undergoes lasting changes when facilities close. For every one direct coal job that has been lost, four other jobs have disappeared in these communities, meaning a quarter of a million jobs already have been lost.[4]

The Inflation Reduction Act's investments in clean energy—paired with strong standards to ensure the jobs we create are good-paying, union jobs—can reduce income and racial inequality. These standards will help ensure the jobs created pay fair wages, protect workers' health and safety, and make the investments in communities that need them the most. In addition, federal agencies are starting to produce guidance for many of the law's programs that explicitly prioritize funding for projects that include high-road labor practices, investment in disadvantaged communities, and community benefits that enable local workers and communities to secure economic and environmental benefits. Finally, while there is no policy "silver bullet" that can fully address the energy transition for workers and communities, the Inflation Reduction Act also includes groundbreaking provisions intended to ensure that these investments are targeted and prioritized in the places that need them most.

GROWING CLEAN ENERGY AND GOOD JOBS

The Inflation Reduction Act delivers strong investments in clean energy that will support and create high-quality, union jobs, particularly in hard-hit communities, while helping reach our climate goals.

The strengthened and newly established tax credits for clean energy in the Inflation Reduction Act will not only help drastically reduce emissions, but provide high-quality jobs in the clean economy—more than **1,700,000 jobs over a decade.**[5] Crucially, the law includes provisions that make it more likely the jobs created by these investments are high-quality jobs here in the United States. The law—for the first time ever—includes high-road labor standards that go hand-in-hand with clean energy deployment. To receive the full value of the tax credit (for projects 1 megawatt or greater), developers will have to pay a prevailing wage and utilize a certain percentage of registered apprentices in the projects.

These tax credits will also help address the racial and economic inequality in the country through two "bonus" credits. The Low-Income Communities Credit provides a bonus tax credit for projects located in communities that have a significant share of the population below the poverty line, and the Energy Communities Credit provides a bonus tax credit for projects located in communities that have seen significant job loss in the fossil fuel economy, or due to the closure of a coal mine or coal-

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[2] Intergovernmental Panel on Climate Change (IPCC), Synthesis Report of the IPCC Sixth Assessment Report (AR6), (2023). Available online: *https://report.ipcc.ch/ar6syr/pdf/IPCC_AR6_SYR_LongerReport.pdf.*

[3] Environmental Policy Institute (EPI), "What labor market changes have generated inequality and wage suppression?", December 12, 2019. Available online: *https://www.epi.org/publication/what-labor-market-changes-have-generated-inequality-and-wage-suppression-employer-power-is-significant-but-largely-constant-whereas-workers-power-has-been-eroded-by-policy-actions/.*

[4] Union of Concerned Scientists (UCS) and Utility Workers Union of America (UWUA), Supporting the Nation's Coal Workers and Communities in a Changing Energy Landscape, May 4, 2021. Available online: *https://www.ucsusa.org/sites/default/files/2021-05/Supporting-the-Nation%27s-Coal-Workers-%28report%29.pdf.*

[5] BlueGreen Alliance, Fact Sheet: Clean Energy Tax Credits in the Inflation Reduction Act, August 24, 2022. Available online: *https://www.bluegreenalliance.org/resources/fact-sheet-clean-energy-tax-credits-in-the-inflation-reduction-act/.*

fired power plant, or are host to a brownfield site. These provisions are discussed further below.

Job Creation Potential and Job Quality

Analysis from the Political Economy Research Institute at the University of Massachusetts Amherst, commissioned by the BlueGreen Alliance, finds that the law's climate, energy, and environmental investments **will create more than 9 million jobs over the next decade**—an average of nearly 1 million jobs each year (see Table 1).[6]

Table 1: Job Creation Estimates from Investments in the Inflation Reduction Act

Policy Area	Job Creation Potential over 10 Years
Clean Energy Investments	5,000,000
Clean Manufacturing Supply Chains	900,000
Electric Vehicles and Clean Transportation	400,000
Energy Efficient Homes and Offices	900,000
Environmental Justice and Climate Resilience	150,000
Natural Infrastructure	600,000

Political Economy Research Institute at the University of Massachusetts Amherst.

Job quality is just as important as job quantity. While we're working to grow clean energy jobs in this country, we must ensure that we are not only ensuring those are good jobs, but *accessible* jobs. This includes supporting and growing pathways into good union jobs in these and other sectors for workers of color and other segments of the population historically left out of these jobs.

One of the tools at our disposal in the fight for equity is unionization. On the whole, union jobs pay better, have better benefits, and are safer than non-union jobs. Workers who are members of or are represented by a union earn significantly more than those who are not across all relevant industries and occupations, with especially pronounced benefits for low-wage workers. On average, union members earn a premium of 15 percent higher wages than non-union workers in the utilities sector and 45 percent higher wages in the construction sector. Across all relevant industries and occupations, workers who are members of or are represented by a union earn significantly more than those who are not, with especially pronounced benefits for low-wage workers, workers of color, and women.[7] In addition, research has shown that through the collective bargaining power of unions, workers are able to get more and better benefits such as health insurance and pensions, and are able to fight for more enforcement of the labor protections they have a right to under the law, such as enforcement of overtime, safety, and health regulations.[8] Increasing union density in the clean energy sector is therefore a key way to address the inequity inherent in our economy.

Another key mechanism for building career pathways and increasing access is through registered apprenticeship, pre-apprenticeship, and other union-affiliated training programs. Registered apprenticeships and other labor-management training programs offer workers a combination of classroom and on-the-job skills training. Pre-apprenticeship programs, meanwhile, are a tool for improving equitable access to jobs by offering underrepresented workers on-ramps to apprenticeship and other training programs.

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[6] Political Economy Research Institute at the University of Massachusetts Amherst for the BlueGreen Alliance, *9 Million Jobs from Climate Action.* Available online: *https://www.bluegreenalliance.org/site/9-million-good-jobs-from-climate-action-the-inflation-reduction-act/*.

[7] U.S. Bureau of Labor Statistics, Table 2. Median weekly earnings of full-time wage and salary workers by union affiliation and selected characteristics. Available online: *https://www.bls.gov/news.release/union2.t02.htm.*

[8] AFL–CIO, Building Power for Working People. Available online: *https://aflcio.org/what-unions-do/empower-workers#:~:text=Union%20Jobs%20Help%20Achieve%20Work%2DLif.*

By requiring that clean energy investments support these workforce development pathways, the Inflation Reduction Act will help:

- Grow and diversify the middle class;
- Eliminate disparities in job quality between clean and traditional energy sectors;
- Increase diversity in the construction workforce by expanding access for women, people of color, veterans, and formerly incarcerated people;
- Equip the construction workforce with the skills needed to build clean energy; and
- Promote hiring of local workers to build projects in their communities.

SUPPORTING ENERGY TRANSITION WORKERS AND COMMUNITIES

An energy transition that is fair for workers and communities will not happen organically. Working people have too often felt the pain of shifts in technology. We can't leave workers or communities behind as these changes happen in our economy, which are also the changes necessary to avoid the worst impacts of climate change. Prioritizing and targeting Federal resources to workers and communities in places impacted by this shift needs to be a deliberate choice. The Inflation Reduction Act provides some of this needed investment, particularly by driving clean energy and manufacturing investments into communities impacted by energy transition.[9] All of the law's investments (and more) will be needed to drive towards a truly equitable transition. These investments include:

- The **Energy Communities Bonus Credit,** which provides a bonus tax credit to drive clean energy investments to energy communities where, among other possible metrics, a coal mine or coal-fired power plant has recently closed. Communities are eligible if they are in census tracts in which: a coal mine has closed after December 31, 1999; where a coal-fired electric generating unit closed after December 31, 2009; or a census tract which directly adjoins an impacted census tract. While clean energy projects can receive partial tax credits regardless of location, the additional tax credit bonus is a key incentive to bring good-paying jobs to areas with coal mine closures, coal power plant unit retirements, or a high percentage of workers in the fossil fuel industry. If the energy community is also considered a low-income community, they are eligible to receive an additional 10 percent tax credit.
- The **Low-Income Communities Bonus Credit,** which provides a 10-percent bonus for the development of wind and solar projects under 5 megawatts in a low-income community, defined as 200 percent below the Federal poverty line. Associated grid technology—such as battery storage and transmission associated with new wind or solar projects—would also qualify. This credit also offers an increased 20-percent tax credit, instead of 10 percent, for projects installed on qualified residential low-income housing projects. This provision is targeted to spur economic development in historically marginalized communities and addresses the reality of these communities facing the brunt of climate change and pollution for decades. This credit— along with the energy communities credit above—are available on top of the domestic content and production/investment tax credits.
- A revival of the **48C Tax Credit,** which will support new clean technology manufacturing facilities in energy transition communities with an expanded investment tax credit. The tax credit is funded at $10 billion, which will support the establishment or expansion of manufacturing facilities to produce solar, wind, battery, electric vehicles (EVs), energy efficiency, and other clean energy technologies. The tax credit is also available to a project that re-equips an industrial or manufacturing facility with equipment designed to reduce greenhouse gas emissions by at least 20 percent.

  Critically, of the $10 billion allocated for 48C, $4 billion is reserved for manufacturing investments to boost job growth and economic opportunities in coal communities facing economic hardship from energy transitions. The funding is specifically targeted to communities that have had coal mines shut down since the end of 1999, coal-fired power units retired since the end of 2009, or are immediately adjacent to those. BlueGreen Alliance research estimates the 48C expansion will **create more than 110,000 jobs over the next 10**

[9] BlueGreen Alliance, *Fact Sheet: Inflation Reduction Act and Bipartisan Infrastructure Law: Investments in Energy Communities.* Available online: *https://www.bluegreenalliance.org/wp-content/uploads/2023/04/Energy-Communities-Fact-Sheet-vFinal.pdf.*

years.[10] Thanks to the $4 billion set aside, many of these will be created in energy transition communities.

- A **permanent extension of the Black Lung Excise Tax** to maintain the funding that provides critical benefits to miners and families. Rates of black lung disease among coal miners are increasing, especially in the Central Appalachian coal region.[11] Black lung is a devastating disease with no cure, and miners with black lung are often totally disabled and unable to work or support their families. The Black Lung Excise Tax supports the Black Lung Disability Trust Fund (BLDTF) and is paid by coal companies at the current rate of $0.55/ton of surface mined coal and $1.10/ton of coal mined underground. The BLDTF pays for medical benefits and provides a small monthly living stipend to coal miners who are disabled by black lung disease and to their surviving dependents. In recent years, Congress has provided only 1-year extensions of the BLDTF, forcing coal miners, black lung advocates, and healthcare workers to expend limited resources on a perpetual fight for the needed funding. That fight is over, thanks to the permanent extension of the BLDTF in the Inflation Reduction Act.

While not in the scope of this committee, the law also provides additional resources that will be critical to support energy communities:

- **Rural Energy Investments.** The law provides $9.7 billion to the U.S. Department of Agriculture (USDA) for USDA Assistance for Rural Electric Cooperatives. With these funds, USDA's Rural Utility Service (RUS) will make grants and loans for electric cooperatives to purchase renewable energy, renewable energy systems and carbon capture and storage systems (CCS), deploy such systems, or make energy efficiency improvements. The funding can also be used for debt relief and other costs associated with terminating the use of facilities operating on non- renewable energy and related transmission assets.

  Many of the communities served by rural electric cooperatives rely on coal plants for both electricity and jobs. As coal plant retirements continue, rural communities need investments to maintain reliable, affordable electricity and economic opportunity. USDA funds can help rural electric cooperatives create new jobs in the same communities that experience coal plant closures and continue to employ the same workers who have kept that community's lights on.

  In addition to providing rural electric cooperatives with new loan opportunities, the Inflation Reduction Act builds on RUS's existing loan authority with $1 billion for renewable energy infrastructure loans. The law also makes it easier for electric utilities by requiring RUS to forgive up to 50 percent of the loan amounts. Funding isn't only limited to cooperatives. Municipal, investor-owned, and Tribal utilities in rural areas are all eligible to take advantage of the new partially forgivable loans.

- The **Energy Infrastructure Reinvestment (EIR) Program.** The Inflation Reduction Act creates a new program within The U.S. Department of Energy's (DOE) Loan Programs Office to help reduce emissions and reuse existing energy infrastructure. Congress provided "seed money" of $5 billion to be used to cover the costs of underwriting loans, and authorized the DOE to loan up to $250 billion. The reinvestment criteria are broad, including nearly any activity that lowers emissions. This includes everything from reducing emissions to continuing operations that will fully redevelop energy facilities for a different economic purpose. For instance, the loans could be used to remediate a retired coal power plant and use the land and existing infrastructure for clean energy production or manufacturing. Or, a power utility could remediate damaged land from a former coal mine and reuse the area by turning it into a pumped hydro storage facility. If targeted the right way, this financing could support economic redevelopment in communities impacted by energy transition, explicitly supporting local community benefits and the acceleration of land remediation efforts.

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[10] Political Economy Research Institute at the University of Massachusetts Amherst for the BlueGreen Alliance, *9 Million Jobs from Climate Action.* Available online: *https://www.bluegreenalliance.org/site/9-million-good-jobs-from-climate-action-the-inflation-reduction-act/*.

[11] U.S. Department of Labor, "Rising Rates of Black Lung Underscore Need for Strong Federal Black Lung Program," March 17, 2023. Available online: *https://blog.dol.gov/2023/03/17/rising-rates-of-black-lung-underscoreneed-for-strong-federal-black-lung-program.*

- A new **Climate Pollution Reduction** grant program at the U.S. Environmental Protection Agency (EPA) for States, municipalities, and Tribes to develop and implement plans to reduce greenhouse gas pollution. The law provides $250 million for non-competitive grants to be distributed to all States, large municipalities, and Tribes to develop plans for greenhouse gas reductions. Planning grants can be used to engage energy communities that could feel the direct impact of actions to reduce greenhouse gasses. Plans can be broad and can be used to identify opportunities to leverage federal funding from a variety of sources. Grants can provide necessary resources for planning for an equitable transition that keeps workers and communities whole. EPA will then competitively award $4.6 billion for the implementation of these plans. These funds can be used for a wide variety of policies, including EV charging infrastructure, buildings, transit, natural infrastructure solutions, and more.

Lifting up workers and communities should be a central focus of a cleaner economy. Energy workers have always been the backbone of our economy. Along with their communities, they have dealt first hand with over a century of boom and bust cycles, union busting, and air and water pollution. But as coal mining jobs continue to decrease, coal-fired power plants continue to shutter, and the world moves away from fossil fuels, energy workers and communities are losing jobs, tax revenue, and union membership. They need and deserve dedicated federal support that builds on community-driven economic development and diversification efforts. With proper implementation, the Inflation Reduction Act programs targeted to energy communities will help grow good union jobs in areas that need it most.

BOOSTING CLEAN MANUFACTURING AND SECURING SUPPLY CHAINS

Manufacturing revitalization is essential to address climate change, support and create good union jobs, and advance racial, economic, and environmental justice. With strong public investments, the U.S. can cut industrial emissions—a leading source of climate and air pollution—while building reliable clean energy supply chains that equitably create good jobs. We cannot and need not hitch climate action to overseas production that is often exploitative, polluting, and vulnerable. The Inflation Reduction Act includes more than $40 billion in tax credits to expand clean technology manufacturing.[12] These investments will help to build out more reliable, equitable, clean, job-creating domestic supply chains for solar panels, wind turbines, EV batteries, and other technologies that are powering our clean energy future. In addition to the Low-Income Energy Communities and 48C tax credits mentioned above, these include:

- A new **45X manufacturing production tax credit,** worth more than $30 billion, to fill critical supply chain gaps by supporting the expansion of solar, wind, and battery manufacturing and critical minerals processing. This credit will create an estimated **560,000 jobs over the next decade.**[13]
- A **bonus 10-percent domestic content tax credit** for clean energy projects that use domestically manufactured materials and parts. To qualify for the domestic content bonus, clean electricity developers must use domestically made iron and steel and manufactured components in which U.S. production accounts for roughly half of the value. Non-profit and government entities also must meet these domestic content requirements to take full advantage of a "direct pay" option that makes the tax credits more accessible. The tax credits are expected to propel dramatic growth in clean energy deployment, stimulating parallel growth in U.S. manufacturing of clean technology parts and materials.
- A more than **$7-billion expansion and update of a tax credit for new clean vehicles,** with standards to catalyze North American manufacturing of electric and fuel cell vehicles and their components.[14] The credit will reduce the cost of new EVs by up to $7,500, while incentivizing the establish-

[12] BlueGreen Alliance, Fact Sheet: Clean Manufacturing Investments in the Inflation Reduction Act. Available online: *https://www.bluegreenalliance.org/resources/fact-sheet-clean-manufacturing-investments-in-the-inflation-reduction-act/*.

[13] Political Economy Research Institute at the University of Massachusetts Amherst for the BlueGreen Alliance, *9 Million Jobs from Climate Action.* Available online: *https://www.bluegreenalliance.org/site/9-million-good-jobs-from-climate-action-the-inflation-reduction-act/*.

[14] BlueGreen Alliance, Fact Sheet: Clean Vehicle Provisions in the Inflation Reduction Act. Available online: *https://www.bluegreenalliance.org/resources/clean-vehicle-provisions-in-the-inflation-reduction-act/*.

ment of a resilient supply chain in North America for essential EV battery components. It also will help to ensure the critical minerals that comprise these batteries are not sourced from countries relying on child and forced labor or countries where supply chain disruptions threaten the EV transition.

These are just some of the more than $50 billion in clean manufacturing investments that will create an estimated **900,000 jobs over the next decade.**[15] Crucially, a number of these manufacturing investments include targeted funding for manufacturers to invest in communities facing coal facility closures due to the energy transition, which could support job creation in the hard-hit communities that powered our Nation for generations.

CONCLUSION

Since the Inflation Reduction Act passed, companies have announced over $242 billion in clean energy investments in 41 States where companies have committed to create more than **140,000 jobs.**[16] Many of these jobs will be in communities that have endured decades of divestment, deindustrialization, and economic insecurity.

As the United States ramps up efforts to grow the clean economy, the Inflation Reduction Act gives us the opportunity to lead globally, rebuild good, union jobs in communities across the Nation, and bolster innovation and production of the clean technology of the future here at home.

Thank you again for the opportunity to speak today.

PREPARED STATEMENT OF PATTY HORVATICH, SENIOR VICE PRESIDENT, BUSINESS INVESTMENT, PITTSBURGH REGIONAL ALLIANCE

Chairman Wyden, Ranking Member Crapo, and members of the Senate Finance Committee, thank you for the opportunity to testify today regarding the Inflation Reduction Act's tax credits, including the bonus for projects, facilities, and technologies located in energy communities.

My name is Patty Horvatich. I am the senior vice president, business investment, with the Pittsburgh Regional Alliance, an affiliate of the Allegheny Conference on Community Development. We are the leading voice for improving the economic future and quality of life across the 10-county region of southwestern Pennsylvania.

I want to thank Senator Casey, my home State Senator, for his leadership to ensure that legacy energy communities like ours have not been forgotten, and instead are placed at the forefront of Federal efforts to attract new energy and manufacturing investments and provide opportunity to people across our region.

For decades, the Pittsburgh region's massive coal reserves were ideally suited to support both heavy industry and energy production. These abundant resources helped to turn the Pittsburgh region into a global manufacturing powerhouse. Pittsburgh energy powered our homes and our steel mills and was the fuel that built our Nation.

As time changed, many of southwestern Pennsylvania's coal-fired power plants and mining operations shut down. Others have been replaced by lower-carbon natural gas. The communities with closed facilities now face harsh realities from the loss of jobs.

Between 2010 and 2022, southwestern Pennsylvania lost approximately 3,100 coal mining jobs. These jobs supported an additional 5,115 indirect and induced jobs. During that same period, we lost 900 jobs at coal-fired power plants. These jobs supported nearly 4,000 additional indirect and induced jobs. That's over 13,000 jobs, in our region alone. And there are more closures on the way. The operator of the Homer City Generating Station, one of our region's last coal-fired power plants, recently announced plans to close that facility. That means more layoffs; more job losses.

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[15] Political Economy Research Institute at the University of Massachusetts Amherst for the BlueGreen Alliance, *9 Million Jobs from Climate Action.* Available online: *https://www.bluegreenalliance.org/site/9-million-good-jobs-from-climate-action-the-inflation-reduction-act/*.

[16] Climate Power, *Climate Energy Boom,* April 2023. Available online: *https://climatepower.us/wp-content/uploads/sites/23/2023/05/April-2023_-Clean-Energy-Boom-Report.pdf.*

Despite these hardships, today southwestern Pennsylvania is open for business, a sentiment shared with State leadership, specifically by Governor Josh Shapiro and his administration.

Our regional economy is diverse—focused on advanced manufacturing, energy, life sciences, robotics, space, and more. These economic opportunities are supported by a high-quality, skilled workforce and driven by robust corporate, government, and university R&D. Home to national labs, including the National Energy Technology Laboratory, and two Tier-1 research institutions in Carnegie Mellon University and the University of Pittsburgh, southwestern Pennsylvania is a trailblazer and leader in critical technologies.

Our strategic location is complemented by navigable waterways, top-of-the-line aviation, rail, and highway infrastructure—all attractive assets for industrial investment.

We have a track record of public-private partnership. We are applying it and working across government, industry, labor, philanthropy and academia to advance an all-of-the-above energy strategy. This spans carbon capture and hydrogen to scaled-up production, modernized distribution, and efficient use of low-carbon electricity to accelerate decarbonization, drive investment, and achieve inclusive growth.

Our ability to transform our environment and economy is why we were selected as host of the inaugural Global Clean Energy Action Forum organized by the U.S. Department of Energy last fall.

While we have powerful assets to build upon, economic growth and vitality for all parts of our region are not a foregone conclusion. Challenges remain. Many of the legacy energy communities in our region face difficult economic realities.

There is intense global demand for new ways to produce and store energy—creating a robust pipeline of large-scale, capital-intensive job-creating projects from electric vehicle and chip manufacturing to battery and solar projects. Everyone wants to see these investments sited in the communities that need them the most. And energy communities like ours have assets that—if readied—can allow them to compete.

Take real estate for example. We are not able to create more land. To compete with regions with greenfield sites and that do not have the same legacy challenges, we need to get former coal sites back to their highest and best use and positioned to secure new investment.

Pennsylvania is being proactive to ready these sites. We have worked with the Commonwealth of Pennsylvania to develop detailed economic development playbooks, with support from the Federal Partnership for Opportunity and Workforce and Economic Revitalization grant program, to revitalize our shuttered coal sites. Our goal is to return these sites to productive use, as quickly as possible to help these communities begin to recover.

The IRA's tax credits, especially those bonus credits that incentivize investments in former coal communities, will ensure that we can bring increased Federal commitments to catalyze investment in these communities.

I have worked in economic development for 26 years. The factors that drive successful investment deals are varied and complex. When a site selection consultant is tasked with siting a new power plant or manufacturing facility, they are weighing site readiness; access to navigable waterways and class 1 railroads; operational costs, including business taxes; workforce availability; and more. For sites like our legacy coal sites to be in the conversation to compete for new investment, they have to be ready to go. These new Federal tax credits help us to be competitive on a global scale. They keep us in the game.

In the last few weeks, I have spoken to multiple companies and site selectors across different industries who want to explore communities where these tax credit opportunities can be realized. One company said they are ". . . exploring the potential of new clean energy technologies like fusion that could utilize the existing infrastructure at these retiring coal sites and bring jobs and economic development back to the community."

The IRA's tax credits, with the bonus credit for projects, facilities, and technologies located in energy communities, are another important tool in our toolbox to encourage investment in our legacy energy communities.

Thank you for the opportunity to present testimony today. I look forward to your questions.

PREPARED STATEMENT OF PHILIP ROSSETTI, SENIOR FELLOW, ENERGY AND ENVIRONMENT, R STREET INSTITUTE

Chairman Wyden, Ranking Member Crapo, and distinguished Senators, thank you for holding this hearing today on the effect of tax incentives in the Inflation Reduction Act on jobs and investment in energy communities. My name is Philip Rossetti, and I am a senior fellow for energy and environment at the R Street Institute (R Street). My work focuses on the effects of U.S. energy policy on environmental outcomes, energy costs, energy security and the economy.

In my testimony today, I would like to make three key points:

1. The fiscal condition of the country is exceptionally poor. High existing debt combined with high spending and rising interest rates, as well as weak projected long-term growth, mean that the Nation is on an unsustainable fiscal trajectory, which will have overall adverse effects on the American public.
2. The design of the tax credit incentives for energy under the Inflation Reduction Act (IRA) incurs a cost to the American public that, at present, does not seem to be outweighed by any reduction in inflation or overall improvement to employment.
3. From an energy policy perspective, the focus of the previous Congress on clean energy subsidies over permitting reform creates a cost-inefficient emission abatement scheme that will primarily enrich companies that would have invested in clean energy even without the IRA.

WORSENING ECONOMIC OUTLOOK FOR THE NATION

In considering the effect of policies that have introduced additional subsidies, such as the IRA, it is important to keep in mind the overall fiscal condition of the Nation and the ability of taxpayers to support those spending efforts. Every dollar that Congress spends—presumably to benefit one party or achieve an outcome—comes at the expense of other Americans either now or in the future. Currently, the fiscal outlook of the United States is exceptionally poor, and debt-financed spending by the Federal Government entails costs to Americans that may outweigh the benefit of subsidies like those in the IRA.

According to *The Budget and Economic Outlook* from the Congressional Budget Office (CBO), the Federal budget deficit for 2023 is projected to be $1.4 trillion.[1] There are currently 158 million taxpayers in the United States, and closing the deficit would cost over $8,000 in new taxes per taxpayer per year. Historically, the Nation has relied on a growing economy or population to mitigate deficits, as was seen in the wake of World War II. However, the population of the United States is not growing as significantly as it has in the past, at only 0.5 percent annual growth before the COVID–19 pandemic and 0.1 percent growth in 2021, compared to 1.7 percent growth in 1961.[2] Additionally, the economic outlook is weak, with the CBO projecting a long-term growth rate of 1.8 percent, which is well below the 2.4 percent average prior to 2008 and the 3.2 percent average from 1974–2001.[3]

A major reason the budgetary and economic outlook for the Nation is so poor is due to the rising cost of servicing existing debt. Prior to the COVID–19 pandemic, attitudes toward additional government spending were largely muted, with advocates of additional spending pointing out that low interest rates favored policy that utilized borrowing.[4] However, pandemic-relief policies focused on spending coupled with supply chains weakened by the pandemic, created conditions ripe for inflation. Relief policies infused cash into markets, which increased demand for goods that were becoming increasingly scarce, and inflation soared. In response, the Federal

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[1] Phillip L. Swagel et al., *The Budget and Economic Outlook: 2023 to 2033,* Congressional Budget Office, February 2023, p. 6. *https://www.cbo.gov/system/files/2023-02/58848-Outlook.pdf.*

[2] "Population Growth (annual %)—United States," The World Bank, 2022. *https://data.worldbank.org/indicator/SP.POP.GROW?locations=US.*

[3] Swagel et al., p. 50. *https://www.cbo.gov/system/files/2023-02/58848-Outlook.pdf.*

[4] Heather Long, "Economists increasingly say it's acceptable for the U.S. to take on more debt—for the right reasons," *The Washington Post,* January 14, 2020. *https://www.washingtonpost.com/business/2020/01/14/economists-increasingly-say-its-ok-united-states-take-more-debt-right-reasons.*

Reserve System has raised interest rates to 4.83 percent, up from 0.08 percent last year.[5]

With rising rates, the cost of servicing U.S. debt has also increased. The projected deficit by the CBO for 2023 is $1.4 trillion, but that is expected to increase to $2.7 trillion by 2033.[6] This deficit growth is largely driven by rising interest payments on public debt, which were $475 billion in 2022. Interest payments are expected to have a 35-percent increase this year to $640 billion and are projected to further rise to $1.4 trillion by 2033.[7] For context, by 2028 the United States will spend more on interest payments than the defense budget.[8]

An environment of high interest rates and above-normal inflation carries significant costs to Americans. Additionally, the Nation's large debt means that either tax increases or spending cuts may be needed in the future. Policies that worsen this outlook, despite concentrating benefits to specific parties, carry an economic cost to Americans at large.

IRA PROVISIONS CARRY HIGH COSTS

The IRA contains many components, but in my testimony, I will focus on two broad aspects: the inflation reducing provisions (which are the tax increase) and the energy subsidies.

The IRA in general was estimated to increase savings and revenues to the Federal Government by $738 billion, while expending $499 billion, for a net revenue increase of $238 billion.[9] The largest revenue raising provision of the IRA is the introduction of a new corporate minimum tax. The revenue raising aspects of the IRA have a deflationary aspect because they reduce the after- tax income of Americans, which reduces their purchasing power and lowers demand for goods, thus easing inflation.

While a focus on corporate taxes is common in policy, it is important to bear in mind that corporations are not the point of final tax incidence, as corporations can pass those taxes onto other parties. Conventionally, it is understood that corporate taxes are paid for by corporate investors, workers and customers in varying degrees dependent upon prevailing economic conditions.[10] In general, empirical estimates have found that between 50 and 100 percent of corporate income taxes are paid for by corporate workers.[11] In fact, even corporate minimum taxes on "super-normal" returns like those present in the IRA are expected to have half their costs fall on corporate workers.[12]

The higher taxes in the IRA are expected to negatively impact the U.S. economy. For example, the CBO noted that the IRA's corporate tax provisions are expected to reduce the incentives of corporations to invest in and do business in the United States since the benefit of their after-tax returns is diminished by the new policy.[13] Since it is expected that these burdens will at least partially fall on U.S. workers, the IRA's provisions are expected to have a negative impact on employment. The Tax Foundation estimated that the IRA will reduce GDP in the long run by 0.2 percent, reduce real wages by 0.1 percent and lead to a loss of 29,000 full-time equivalent jobs overall.[14]

While the tax increases in the IRA in isolation would be expected to trade inflation for weaker economic growth, the IRA's subsidies—particularly for energy—worsen inflation by spending. Initially, the IRA's energy and climate provisions were

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[5] Federal Reserve Economic Data, Federal Funds Effective Rate, St. Louis Fed, May 1, 2023. *https://fred.stlouisfed.org/series/FEDFUNDS.*

[6] Swagel et al., pp. 6, 17. *https://www.cbo.gov/system/files/2023-02/58848-Outlook.pdf.*

[7] *Ibid.*

[8] *Ibid.*

[9] "CBO Scores IRA with $238 Billion of Deficit Reduction," Committee for a Responsible Federal Budget, September 7, 2022. *https://www.crfb.org/blogs/cbo-scores-ira-238-billion-deficit-reduction.*

[10] Greg Mankiw, "Corporate Tax Rates," Greg Mankiw's Blog, May 3, 2006. *https://gregmankiw.blogspot.com/2006/05/corporate-tax-rates.html.*

[11] Stephen J. Entin, "Labor Bears Much of the Cost of the Corporate Tax," Tax Foundation, October 24, 2017. *https://taxfoundation.org/labor-bears-corporate-tax.*

[12] *Ibid.*

[13] Phillip L. Swagel, "Economic Analysis of Budget Reconciliation Legislation," Congressional Budget Office, August 4, 2022. *https://www.cbo.gov/system/files/2022-08/58357-Graham.pdf.*

[14] Alex Durante et al., "Details and Analysis of the Inflation Reduction Act Tax Provisions," Tax Foundation, August 12, 2022. *https://taxfoundation.org/inflation-reduction-act.*

expected to cost $391 billion and represent the largest portion of IRA spending.[15] Prior to the IRA, 10-year projected tax expenditures for all energy were projected at $159 billion, making the increase in expenditure from the IRA more than double the prior level of subsidy for energy.[16] But recent updates to estimates of the IRA's energy-related tax provisions indicate that the spending—and consequently the inflation caused—may be greater than initially expected.

In the Joint Committee on Taxation's estimate of repealing the IRA's energy subsidies, the provisions which were estimated at about $270 billion initially are now valued at $570 billion.[17] It should be noted that this $300 billion increase in cost exceeds the initially estimated $238 billion of fiscal benefit the IRA was supposed to deliver, meaning that the IRA may not result in a net reduction of deficits at all.

Initially, the CBO estimated that the IRA would have a negligible effect on inflation, with a change of between −0.1 and +0.1 percent in inflation.[18] However, given that the spending of the IRA is now expected to potentially exceed its revenue increases, it is much more likely that the IRA will worsen, rather than improve, inflation.

GREEN SUBSIDIES LARGELY EXPECTED TO FLOW TO FIRMS THAT WOULD PRODUCE GREEN ENERGY ANYWAY

The policy intent of energy subsidies, generally, is to facilitate a specific economic outcome despite the cost to the public. For example, the Low-Income Home Energy Assistance Program (LIHEAP) is aimed at alleviating energy bills for low-income Americans, and programs like the Advanced Research Projects Agency–Energy (ARPA–E) are designed to accelerate technological innovation. Achieving these specific policy outcomes is contingent largely upon the design, scope and scale of the subsidy programs.

Less effective forms of subsidy are ones that either do not incentivize behavioral change in the market, or that disburse subsidies to claimants that would have engaged in the subsidized activity regardless of receipt of the subsidy.

Last year, R Street analyzed the effectiveness of the IRA's subsidies in accelerating clean energy growth. We found, consistent with other analyses such as Rhodium Group's and Princeton University's REPEAT Project, that if one assumes no regulatory constraints and favorably assumes one-to-one ratios of replacing fossil fuels with clean energy, the law could reduce energy-related carbon dioxide emissions by 12 percent relative to 2005 levels, bringing overall energy-related carbon dioxide emissions to 35 percent below 2005 levels.[19]

However, our study also found that of the total clean electricity generation through 2030 that would be eligible to claim the IRA subsidies, 67 percent of that generation would have been built even without the subsidy.[20] For context, this means that of the roughly $180 billion of clean electricity incentives initially projected, $120 billion is expected to go to projects that would have been built anyway.[21] As a result, large portions of the IRA's subsidies are expected to be claimed by businesses for doing what they would have done anyway, making the policy effectively a wealth transfer from taxpayers to clean energy producers.

The wealth transference effect of the IRA's energy subsidies is expected to largely benefit the wealthiest Americans. Economist Jason Furman, who chaired the Council of Economic Advisors under President Barack Obama, estimates that the top 1

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[15] "CBO Scores IRA with $238 Billion of Deficit Reduction." *https://www.crfb.org/blogs/cbo-scores-ira-238-billion-deficit-reduction.*

[16] Office of Tax Analysis, Tax Expenditures FY 2023, U.S. Department of the Treasury, December 9, 2021, p. 22. *https://home.treasury.gov/system/files/131/Tax-Expenditures-FY2023.pdf.*

[17] William McBride and Daniel Bunn, "Repealing Inflation Reduction Act's Green Energy Tax Credits Would Raise $570 Billion, JCT Projects," Tax Foundation, April 26, 2023. *https://taxfoundation.org/inflation-reduction-act-green-energy-tax-credits-analysis.*

[18] Swagel, "Economic Analysis of Budget Reconciliation Legislation." *https://www.cbo.gov/system/files/2022-08/58357-Graham.pdf.*

[19] Philip Rossetti, "Potential Effects of the Inflation Reduction Act on Greenhouse Gas Emissions," R Street Institute, September 27, 2022. *https://www.rstreet.org/commentary/potential-effects-of-the-inflation-reduction-act-on-greenhouse-gas-emissions.*

[20] *Ibid.*

[21] *Ibid.*

percent of Americans will be the biggest beneficiaries of the IRA subsidies, receiving on average over $11,000 each.[22]

Additionally, some modifications to subsidy programs under the IRA are unlikely to yield any notable climate benefit. For example, modifications to subsidies for electric vehicles (EVs) were designed to incentivize domestic production. However, these changes have narrowed the possible claimants of the subsidy. Of the 91 models of electric cars and trucks on the market today, only 14 qualify for the IRA's EV tax credit.[23] While this tightening of the tax credit can help to keep dollars in select markets, such as American-made vehicles, it should be noted that the effect of the policy is at odds with stated policy objectives of expanding EV adoption. In our analysis, we noted that baseline projections of alternative fuel vehicle sales, including EV sales, greatly exceeded the estimated cost of the subsidy, indicating that the IRA's modifications to the EV subsidy would result in minimal, if any, climate benefit.[24]

Optimistically, though, we noted that some provisions of the IRA represented technical improvements to subsidy design.[25] The IRA's transition of certain tax credits for electricity and fuels to be awarded based upon emission abatement rather than being awarded for specific technology types will, all else being equal, increase the emission benefit per dollar spent on subsidy. And some subsidies, such as those targeted at clean fuels, were at least directed at nascent technologies that are not yet fully commercialized, meaning the tax credits would be more likely to incentivize innovation, unlike most of the clean electricity tax credits that are directed to fully commercialized technologies like wind and solar power.[26]

Importantly, the effectiveness of any climate-related policy is dictated largely by the market conditions. In our analysis of the IRA, we noted that our projections of emission abatement were unrealistically optimistic because they assumed that capital was the primary constraint to clean energy adoption. More recently though, it seems that permitting and other barriers to market entry are more significant inhibitors of clean energy growth than capital availability.

An update to Princeton University's REPEAT Project found that, without transmission growth, 80 percent of the potential emission benefits of the IRA would not be achieved.[27] Additionally, past R Street research has found that projects related to clean energy and transmission are more likely to require the most stringent level of environmental review: an environmental impact statement (EIS). R Street found that for National Environmental Policy Act decisions made by the Bureau of Land Management, only 0.3 percent of oil and gas projects require an EIS, but 12 percent of renewable projects do.[28] Additionally, research from the Brookings Institution has found that wind energy projects and transmission projects take longer to permit than fossil fuel projects.[29]

According to Lawrence Berkely National Laboratory, by the end of 2022 there were over 1,350 gigawatts (GW) of energy generation capacity in interconnection queues.[30] This is a 35-percent increase from the year prior.[31] Of this generation ca-

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[22] Jason Furman, "Will the Inflation Reduction Act Affect the Distribution of After-tax Income?" Harvard University, March 30, 2023. *https://www.brookings.edu/wp-content/uploads/2023/02/2b_20230330-BPEA-climate-furman-comment.pdf.*

[23] Tanya Snyder, "These 14 EVs are the only ones left that get the tax credit," *PoliticoPro,* April 17, 2023. *https://subscriber.politicopro.com/article/2023/04/ev-treasury-department-regulation-00092123.*

[24] Rossetti. *https://www.rstreet.org/commentary/potential-effects-of-the-inflation-reduction-act-on-greenhouse-gas-emissions.*

[25] *Ibid.*

[26] *Ibid.*

[27] Jesse Jenkins et al., "Electricity Transmission Is Key to Unlock the Full Potential of the Inflation Reduction Act," Princeton University, September 2022, p. 4. *https://repeatproject.org/docs/REPEAT_IRA_Transmission_2022-09-22.pdf.*

[28] Philip Rossetti, "The Environmental Case for Improving NEPA," R Street Institute, July 7, 2021. *https://www.rstreet.org/commentary/the-environmental-case-for-improving-nepa.*

[29] Rayan Sud et al., "How to Reform Federal Permitting to Accelerate Clean Energy Infrastructure: A nonpartisan way forward," Brookings Institution, February 13, 2023. *https://www.brookings.edu/wp-content/uploads/2023/02/20230213_CRM_Patnaik_Permitting_FINAL.pdf.*

[30] "Queued Up: Characteristics of Power Plants Seeking Transmission Interconnection as of the End of 2022," Lawrence Berkely National Laboratory, April 2023. *https://emp.lbl.gov/queues.*

[31] Joseph Rand et al., "Queued Up: Characteristics of Power Plants Seeking Transmission Interconnection as of the End of 2021," Lawrence Berkely National Laboratory, April 2022. *https://emp.lbl.gov/publications/queued-characteristics-power-plants-0.*

pacity, 1,250 GW is low-carbon.[32] Wait times to interconnect are also increasing. Historically, wait times were under 2 years prior to 2007, but rose to 4 years from 2018–2022 and reached a median of 5 years by the end 2022.[33] Simply put, almost all new electricity resources being built are for clean energy, and it is taking longer than ever to connect those resources to the grid.

The difficulties of building and siting resources that are subsidized under the IRA also inhibit the effectiveness of provisions in the subsidy structure designed to benefit workers or specific communities. For example, the IRA includes bonus subsidy under the production tax credit and investment tax credit for projects that are sited in brownfield sites or communities where coal mines or facilities have closed. However, since the primary issue of siting new clean energy is an issue of marrying potential generation and available transmission resources, and not of funding, such provisions are likely to have only a minimal impact in steering projects to areas that would not otherwise be considered absent the subsidy bonus.

CONCLUSION

While substantial subsidies in the IRA—which seem to be exceeding initial estimates of cost—may benefit subsidized firms, they cause broader harm to the American public through tax increases and inflation. The design of the subsidies, which largely benefit claimants for behavior they would have undertaken anyway, means the benefits of the subsidies will mostly be concentrated to the wealthiest Americans. Efforts to steer clean energy growth to specific communities may also fail to bear fruit, as investment decisions and growth are increasingly a function of permitting and siting constraints rather than capital availability.

Thank you again for holding this hearing on the effects of the Inflation Reduction Act and your consideration of my views. I look forward to any questions you may have.

QUESTIONS SUBMITTED FOR THE RECORD TO PHILIP ROSSETTI

QUESTION SUBMITTED BY HON. MIKE CRAPO

Question. Critics have pointed out the IRA's Davis-Bacon and government registered apprenticeship requirements disqualify a number of American workers—including those who trained in industry registered apprenticeship programs—from working on projects and needlessly raise their cost at taxpayer expense. These impacts are aggravated by supply chain disruptions and the effects of the administration's inflation stimulating policies.

Please explain whether you agree that these requirements discriminate against certain American workers, and increase the costs for taxpayers and developers seeking to build clean energy projects? To the extent possible, please provide the economic evidence you base your position upon.

Answer. From an economic perspective, the presence of any conditionality in subsidy eligibility will result in higher overall costs of the subsidy relative to the expected benefit. For example, the Federal Government subsidizes public transit infrastructure in many major metropolitan areas, but these subsidies stipulate that funds may be used only for the purchase of American-produced equipment. Research has shown that Federal subsidies for the purchase of rolling stock for these transit systems increases the procurement costs by 34 percent, as the effect of the subsidy is to shield its recipients from competition that would reduce costs.[1] Similarly, the imposition of labor requirements in the IRA's clean energy subsidies mean that firms are rewarded for meeting criteria that captures the subsidy, rather than by having lower-cost product.

In many cases the restrictions on eligibility for subsidies is intended to produce an outcome that a more cost-effective subsidy cannot produce. For example, domestic content requirements for government procurements related to infrastructure or

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[32] Joseph Rand et al., "Queued Up: Characteristics of Power Plants Seeking Transmission Interconnection as of the End of 2022," Lawrence Berkely National Laboratory, April 2023. *https://emp.lbl.gov/queues.*

[33] *Ibid.*

[1] Philip Rossetti et al., "Buy America Regulations May Raise Cost of Subsidized Infrastructure," American Action Forum, July 7, 2017. *https://www.americanactionforum.org/research/buy-america-regulations-may-raise-cost-subsidized-infrastructure/.*

national defense are intended to reduce supply chain vulnerabilities to foreign firms. In the case of the Inflation Reduction Act (IRA), labor eligibility requirements are likely intended to increase wages and employment for subsidy claimants. However, this policy intention may not deliver the hoped-for outcome, as policies that effectively encourage clean energy producers to incur higher labor costs may have long-term negative effects on future employment, because while the effect of the IRA's policies are to encourage higher labor expenditures, they do not ensure commensurate increases in labor productivity.

For an economic example, it is well understood that increases in minimum wage requirements result in lower employment. The Congressional Budget Office (CBO) provides data analysis to this point, showing that the effect of a higher Federal minimum wage is fewer employed workers, with higher earnings for workers that remain employed and significantly lower earnings for workers that are unlikely to have a productive output that warrants the artificially increased salary, causing these workers and their families to enter into poverty.[2] When we consider the effect of the IRA subsidies' wage requirements, what we anticipate is that the subsidy will enable employers to pay workers a wage that exceeds the productive output of their labor, resulting in an overall net increase in labor costs that is borne by taxpayers instead of employers or customers. Consequently, this distortion in the labor market means that if and when the subsidy sunsets, employment that was propped up by subsidy would lead to some workers becoming unemployed, and potentially unable to attain a salary that they maintained under the subsidies.

Additionally, the apprenticeship requirement of the subsidies, which require 15 percent of construction labor hours to come from apprentices, discriminates against workers that are no longer apprentices or participate in an ineligible apprenticeship program.[3] From an economic perspective, subsidies should be agnostic in how outcomes are achieved, which in the case of the clean energy subsidy is intended to increase clean energy uptake in the market. But by imposing stringent criteria on eligibility related to labor, the effect of the subsidy will be to encourage more workers to participate in eligible registered apprenticeships, and discourage participation in ineligible programs as well as encourage firms to utilize more apprentice labor than they otherwise would have absent the subsidy criteria.

My expectation is that the effect of the subsidies' apprenticeship and wage requirements will be to raise the overall cost of labor in the sector, shift employment from conventional workers to apprenticed ones, and reduce participation in apprenticeships that would not be eligible for the subsidy. The overall effect will be to make construction of clean energy more expensive than it would be absent these requirements. Industry participants and workers may favorably view the IRA subsidies as they are the recipients of them, but the higher costs of labor and clean energy production will be dispersed among taxpayers, which are unlikely to be able to support the IRA subsidies indefinitely.

QUESTION SUBMITTED BY HON. CHUCK GRASSLEY

Question. In your written testimony you note that R Street has found that of the total clean energy generation through 2030 that would be eligible for IRA subsidies, 67 percent of that would have been built anyway. We have heard claims that millions of jobs will be created thanks to the IRA subsidies. Based on your study, is it likely that many of these job numbers are overblown or represent activity that would have happened anyway?

Answer. While the IRA may result in increased employment in the subsidized sectors of the economy, it will not on net increase the number of jobs held by Americans. In economic parlance, a job is the combination of labor via a worker, and capital that is supplied by an employer. To "add jobs" to the economy via Federal policy, the policy needs to either increase capital availability to unemployed workers or increase labor availability by increasing the number of workers. The IRA does neither of these; it instead takes capital from one sector of the economy and moves it to another.

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[2] "How Increasing the Federal Minimum Wage Could Affect Employment and Family Income," Congressional Budget Office, January 30, 2024. *https://www.cbo.gov/publication/55681.*

[3] "Prevailing Wage and Registered Apprenticeship Overview," Internal Revenue Service. *https://www.irs.gov/pub/irs-pdf/p5855.pdf.*

Additionally, the United States has enjoyed historically low unemployment rates since the Tax Cuts and Jobs Act of 2017 (excepting for the early months of the pandemic), with the latest unemployment rate at 4 percent.[4] What this means is that there are few workers that are unemployed and would thus be pulled into the workforce via the IRA subsidies the way a stimulus bill during a recession would increase employment. Increased employment in the clean energy sector caused by IRA subsidies will likely mean lost jobs in other sectors of the economy.

Furthermore, because substantial employment in clean energy was already expected before the IRA's adoption into law, it is less probable that the subsidies will result in many new jobs even within the subsidized economic sectors, since labor demand in clean energy was already anticipated to be high, labor scarcity would already have been a constraining factor on new clean energy deployment.[5] In other words, if an industry is flush with cash but short on workers, further increasing their available capital is not guaranteed to increase available labor if there are reasons other than salary that constrain entry into the workforce.

QUESTIONS SUBMITTED BY HON. TODD YOUNG

Question. In your written testimony you suggested that the actual financial impacts of the Inflation Reduction Act (IRA) may be quite different than its proclaimed benefits of increasing revenues and controlling inflation.

It's startling that the Joint Committee on Taxation's initial $270-billion estimate for energy subsidies under the IRA has now escalated to an astonishing $570 billion.

Another key concern is how this law could affect American workers, as studies indicate corporate taxes often burden them significantly. The problem could worsen as the Congressional Budget Office believes that the IRA's corporate tax clauses might discourage U.S. corporate investment, potentially causing job loss and lower wages.

With these considerations in mind, what do you suggest this committee do to guard against these fiscal burdens?

Answer. One key role of the Senate Committee on Finance as it relates to the IRA will be ensuring transparency in the disbursement of tax credits, as well as evaluating whether modification or repeal of tax credits would better serve policy objectives. To this end, I would encourage the committee to request analysis from the U.S. Energy Information Administration (EIA) as to the prominent barriers to the deployment of clean energy in the United States, and for them to estimate the impact (or lack thereof) of the IRA's clean energy subsidies.

Additionally, it would be useful for the committee to request from the Congressional Budget Office (CBO) information as to the overall expected economic effects of the IRA's clean energy subsidies, and the net outcomes. The EIA and CBO are nonpartisan, respected bodies that can provide Congress with a clearer picture as to the economic tradeoffs of the IRA's subsidies that are not always articulated in analyses from institutions that may be exclusively focused on either the environmental benefits or the economic costs.

A better understanding of whether provisions of the IRA carry particularly high burdens or low benefits can create opportunities for Congress to modify the subsidies to be more efficient.

Question. How can Congress protect the American worker, secure our economic stability, and move down a path that does not inadvertently cause economic decline?

Answer. The fiscal trajectory of the United States is, in a word, unsustainable. Not only does the Federal Government—and thus, American taxpayers—face an extraordinary deficit projected to be $1.6 trillion in 2024 and rising to $2.6 trillion by 2034, but it is key for Congress to understand that it is extremely unlikely that this

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[4] "Civilian unemployment rate," Bureau of Labor Statistics. *https://www.bls.gov/charts/employment-situation/civilian-unemployment-rate.htm.*

[5] *United States Energy and Employment Report 2023,* U.S. Department of Energy, June 28, 2023. *https://www.energy.gov/sites/default/files/2023-06/2023%20USEER%20REPORT-v2.pdf.*

deficit could be closed exclusively via tax increases.[6] Budget outlays were 22.7 percent of GDP in 2023, and projected to climb to 24.1 percent by 2034. But revenues historically have only amounted to 17.3 percent of GDP, and even though tax increases could press this number higher, high tax rates carry their own economic "opportunity cost" (the lost economic benefits from taxpayers using money on taxes instead of other purchases).[7] Ultimately, failure to balance the budget will further increase interest payments owed by taxpayers, causing them future economic harm.

Without opportunities for tax increases, the budget must be balanced by reduced expenditure. To that effect, it would be wise for Congress to extensively review its expenditures and interrogate the expected benefits of Federal spending to the cost it carries. To the extent that Federal subsidies may disproportionately benefit wealthy Americans, or fail to yield an economic or social benefit, those subsidies may not be worth maintaining. In the case of the IRA, indefinite subsidies for clean energy primarily benefit clean energy investors who are themselves wealthy Americans. Indeed, as noted in my testimony, we at R Street expect only a fraction of these subsidies to induce additional clean energy deployment relative to baseline projections. From an economic as well as an environmental perspective, these subsidies carry a high cost with minimal benefit, and simultaneously worsen the economic prospects of future Americans.

PREPARED STATEMENT OF HON. DANIEL R. SIMMONS, PRINCIPAL, SIMMONS ENERGY AND ENVIRONMENTAL STRATEGIES

I support working to increase jobs and investment in economically distressed communities and traditional energy communities, but the way that Inflation Reduction Act defines "energy communities" appears to be leading to some strange outcomes.

[Note: I write that the IRA "appears" to be leading to some strange outcomes because as of this writing, the Federal Government does not appear to have released the final maps. According to the Department of Energy's IRA Energy Community Tax Credit Bonus Mapping Application, an updated map will be released later this month.]

Just 2 miles south of here is an "energy community."[1] This energy community includes the Anacostia Naval Station, Bolling Air Force Base, the U.S. Naval Research Station, and DC Water's Blue Plains water treatment plant. The areas to the west of 295 are included in an energy community, but the areas to the east of 295 are not. Also, the energy community ends at the DC-Maryland border. Across the Potomac in Virginia, this energy community includes the northern part of the city of Alexandria, but not the southern part.

Because I grew up in northern Utah, also I looked at how energy communities are designed in Utah and neighboring Idaho. Again, there may be some strange results. I grew up in Cache County, UT. That county is not an energy community, but both counties to the east and west, Box Elder and Rich Counties both may be designed as energy communities. They both meet the fossil fuel employment threshold, but it is not clear if they meet the unemployment rate requirement and energy community status. However, none of the counties in Idaho that border Utah or Nevada meet the fossil fuel employment threshold. The only county in southeastern Idaho that meets that threshold is Bannock County.[2]

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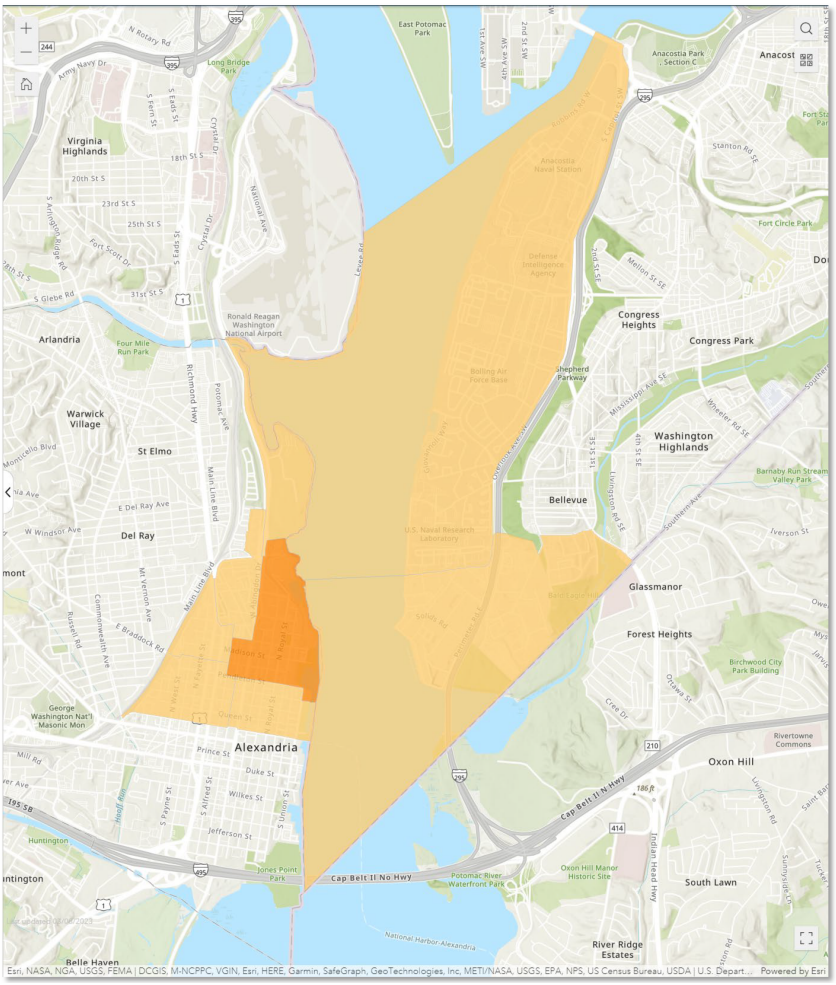
[6] *The Budget and Economic Outlook: 2024–2034,* Congressional Budget Office, February 2024. *https://www.cbo.gov/system/files/2024-02/59710-Outlook-2024.pdf.*

[7] *Ibid.*

[1] National Energy Technology Laboratory, Energy Community Tax Credit Bonus, *https://arcgis.netl.doe.gov/portal/apps/experiencebuilder/experience/?id=a2ce47d4721a477a8701bd0e08495e1d.*

[2] National Energy Technology Laboratory, Energy Community Tax Credit Bonus, *https://arcgis.netl.doe.gov/portal/apps/experiencebuilder/experience/?id=a2ce47d4721a477a8701bd0e08495e1d.*



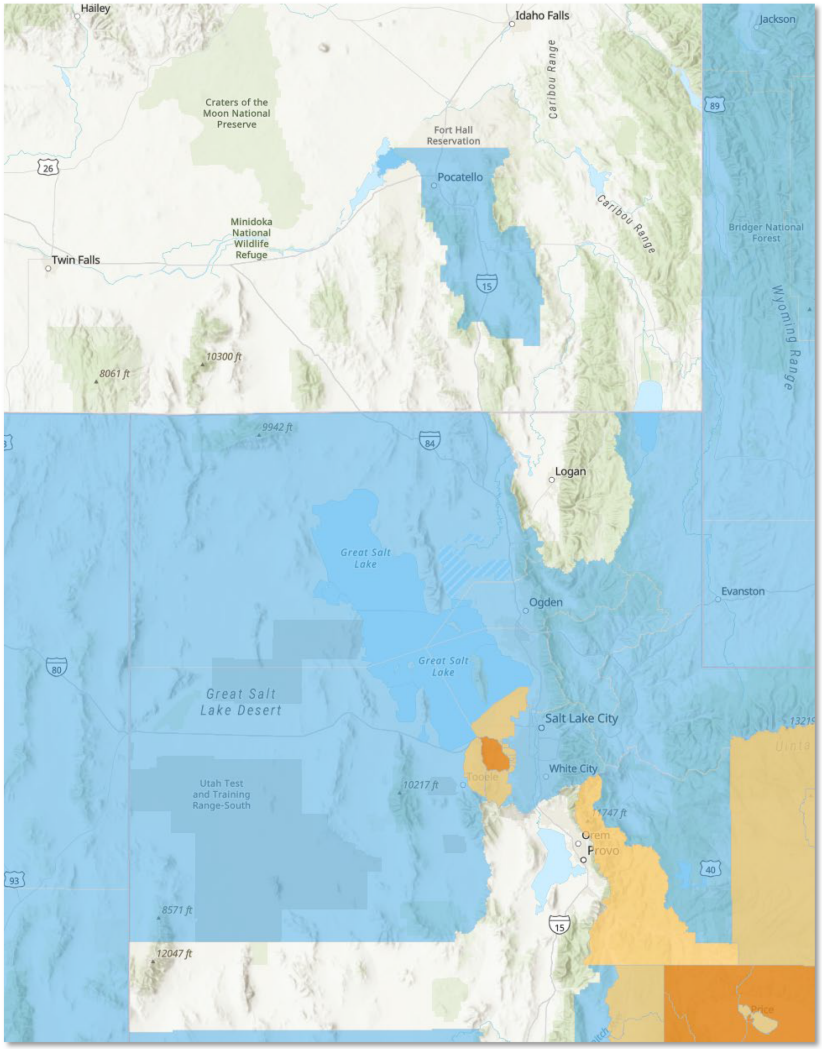
As noted above, I want to see new jobs and investment in areas defined as energy communities,[3] but if the final maps show that Box Elder County, UT is an energy community, but neighboring Cassia, and Oneida Counties in southern Idaho are not energy communities, that is a strange outcome. Additionally, what sense would it make for the energy community tax credit bonus to apply to northern Alexandria, VA but not southern Alexandria?

GROWING JOBS AND INVESTMENT THROUGH LESS RED TAPE AND FASTER PERMITTING

While the final maps showing the eligible energy communities have not been released as of this writing, it appears there will be some odd outcomes where some communities are included while similarly situated communities are excluded. This is why I highlight the distinction between northern and southern Alexandria, VA even though it is highly unlikely that someone is going to site a wind or solar facility in either place. If the energy community closest to our present location is odd, then there are likely many other odd results.

[3] *See* Interagency Working Group on Coal and Power Plant Communities and Economic Revitalization, Energy Community Tax Credit Bonus, *https://energycommunities.gov/energy-community-tax-credit-bonus/*.

The example of the Utah-Idaho border is also instructive. People could site a PTC or ITC-eligible project in Box Elder County, UT versus across the Idaho border in Cassia County, but the wind or solar resource would be essentially the same. This is an inexplicable outcome where facilities are sited based on tax credit "adders" instead of siting the facilities where they make the most sense in terms of providing value to the electric grid or providing value to electricity users.



Instead of such outcomes, I believe it would be preferable to have more broadly applicable tax bonuses along with permitting reform. Permitting reform is indispensable to enable the rapid increase in renewable energy generation technologies.

For example, the authors of the Net Zero America report from Princeton University believe the United States needs to build between 2x and 5x as much electricity transmission as we have today to achieve net zero.[4] The National Renewable Energy

[4] Net Zero America: Potential Pathways, Infrastructure, and Impacts, *https://netzeroamerica.princeton.edu/img/Princeton%20NZA%20FINAL%20REPORT%20SUMMARY%20(29Oct2021).pdf.*

Laboratory estimates that to meet President Biden's goal of a zero-carbon grid by 2035, the transmission capacity must increase up to 3 times today's capacity "or between 1,400 and 10,100 miles of new high-capacity lines per year starting in 2026."[5]

While the energy community tax bonus may help to build wind and solar projects, without massive amounts of additional electricity transmission, decarbonization of the grill will be greatly slowed. Worse, based on the approvals for new transmission lines given out by the Biden administration, there is no possible way to build that many miles of transmission lines.

TRANSMISSION PERMITTING TAKES YEARS AND YEARS

Last month the Biden administration approved the construction of the TransWest Express transmission project running from Wyoming to southern Nevada.[6] The Biden administration deserves kudos for getting this approval over the finish line, but it has taken over 15 years since the company first filed a preliminary right-of-way application with the Bureau of Land Management.[7]

But even with the Biden administration's approval, the Notice to Proceed excludes "several segments" on Federal lands and only authorizes the company to "start non-surface disturbing, pre-construction activities on the Bureau of Land Management" land.[8]

Another example of the long time it takes the Federal Government to permit transmission lines is the Gateway South Transmission Line from western Wyoming to central Utah. The Biden administration issued a notice to proceed on this transmission line last May, 15 years after the PacificCorp first filed its original application.[9]

Another example is the Biden administration's approval of the Ten West Link last year.[10] The approval of this transmission line was very fast in comparison, but it still took also 7 years from the first filing by the company until the administration approved the transmission line.[11]

If we need to build between 2x and 5x as much transmission lines in the United States as we have constructed over more than a century, the Federal Government needs to greatly speed up its approval process because currently only taking 7 years to approve a transmission line is a speedy approval.

WE NEED FASTER MINERAL AND MATERIALS PERMITTING AS WELL

While the energy community designation will facilitate more new projects, these projects require massive amounts of minerals and materials—far more than our current energy economy which is powered mostly by oil, coal, and natural gas. For example, an electric vehicle requires six times the mineral inputs of a conventional car.[12] The International Energy Agency's "sustainable development scenario," calls for a 42-fold increase in lithium demand, a 25-fold increase in graphite demand, a

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[5] National Renewable Energy Laboratory, 100% Clean Electricity by 2035 Study, *https://www.nrel.gov/analysis/assets/pdfs/100-clean-electricity-by-2035-study-1-slide.pdf.*

[6] BLM Approves Construction of TransWest Express Transmission Project, April 11, 2023, *https://www.blm.gov/press-release/blm-approves-construction-transwest-express-transmission-project.*

[7] TransWest Express Timeline, *https://www.transwestexpress.net/about/timeline.shtml.*

[8] Bureau of Land Management, Notice to Proceed, April 10, 2023, *https://eplanning.blm.gov/public_projects/65198/200123119/20076580/250082762/Notice%20to%20Proceed%20-%20TransWest%20Express%204.10.23.pdf.*

[9] *See* Bureau of Land Management, Record of Decision for the Energy Gateway South Transmission Project, p. 1, December 2016, *https://eplanning.blm.gov/public_projects/nepa/53044/92847/111847/EGS-RecordofDecision.pdf.*

[10] U.S. Department of the Interior, *Biden-Harris Administration Approves Clean Energy Transmission Project in Arizona and California with Potential to Lower Costs for Consumers,* July 14, 2022, *https://www.doi.gov/pressreleases/biden-harris-administration-approves-clean-energy-transmission-project-arizona-and.*

[11] *See* Bureau of Land Management, Final Environmental Impact Statement and Proposed Resource Management Plan Amendments for the Ten West Link Transmission Line Project, p. 1–1, September 2019, *https://eplanning.blm.gov/public_projects/nepa/59013/20003312/250003944/Final_EIS_Ten_West_Link.pdf.*

[12] International Energy Agency, *The Role of Critical Minerals in Clean Energy Transitions,* May 2021, *https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions.*

21-fold increase in cobalt demand, a 19-fold increase in nickel demand, and a 7-fold increase in rare earth demand by 2040—only 17 years from now.[13]

One problem is that mining and mineral processing is far more concentrated than oil production has been for at least the last 50 years. In fact, China is the largest processor of copper, nickel, cobalt, lithium, and rare earths—processing between 35 percent and 85 percent of these minerals.[14] By comparison, the 13 members of OPEC—together—only produce around 40 percent of the world's oil.

Worse, China has a terrible human rights track record. The Biden administration and other countries have sanctioned China over China's abuses against the Uyghur people for example. It's not just China, according to experts, the Democratic Republic of Congo has more cobalt reserves than the rest of the world combined, but there are no "clean" supply chains of cobalt in the DRC. Much of the DRC's cobalt is being mined by so-called "artisanal" miners, which include children, who are paid just a few dollars a day for dangerous work.[15]

The problems with production in China and other places are not limited to modern-day slavery and human rights abuses, but also environmental degradation. The German publication Deutsche Welle argues that battery production "causes radioactive earth dumps, poisoned groundwater and Indigenous population displacement" in places like China, the DRC, and Rwanda.[16]

But there is a solution—more mineral and material production in the United States along with the attendant jobs and investment. Just as "drill, baby, drill" worked for oil and natural gas production, "mine, baby, mine" can work for minerals in the United States. But one critical, and overlooked, aspect of the shale revolution in the United States was that this revolution occurred on State and private lands, where energy entrepreneurs could get access to the resources and permitting could happen much quicker than on Federal lands. For example, in 2022 it took the Bureau of Land Management 109 days on average to process a permit to drill on Federal lands,[17] however, in Texas, it takes only 2 days on average.[18]

In the case of mining, there is great mineral potential in the United States—potential that is necessary to produce the minerals for the new energy facilities in designated energy communities, but the Biden administration has stifled almost all new mining development. To name a few examples, the Biden administration has stymied the development of the Twin Metals and Polymet mines in Minnesota, the Resolution and Rosemount mines in Arizona, and the Pebble Mine in Alaska. They have also reduced access to the Ambler Mining District in Alaska. The Biden administration has been more disposed toward lithium mines, such as Rhyolite Ridge and Thacker Pass, but actual construction has only begun at Thacker Pass.

If we want more jobs and investment with the new energy economy facilitated by the energy communities' provisions, we need massive amounts of new mineral production, processing, and manufacturing. Permitting reform should unleash more mineral production and processing in the United States.

CONCLUSION

I support working to increase jobs and investment in economically distressed communities and traditional energy communities, but the way that the Inflation Reduction Act defines "energy communities" appears to be leading to some odd outcomes. To advance jobs and investment in new energy technologies, permitting reform is

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[13] International Energy Agency, *The Role of Critical Minerals in Clean Energy Transitions,* May 2021, *https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions.*

[14] Congressional Research Service, *U.S. Aluminum Manufacturing: Industry Trends and Sustainability,* October 26, 2022, *https://crsreports.congress.gov/product/pdf/R/R47294#:~:text=U.S.%20primary%20smelters%20use%20older,requires%20relatively%20large%20capital%20investments.*

[15] *See e.g.,* Terry Gross, "How 'modern-day slavery' in the Congo powers the rechargeable battery economy," NPR, February 1, 2023, *https://www.npr.org/sec.ons/goatsandsoda/2023/02/01/1152893248/red-cobalt-congo-drc-mining-siddharth-kara.*

[16] Michel Penke, "The toxic damage from mining rare elements," DW.com, April 13, 2021, *https://www.dw.com/en/toxic-and-radioactive-the-damage-from-mining-rare-elements/a-57148185#:~:text=Securing%20just%20one%20ton%20of%20rare%20earth%20elements,Research%20Division%20of%20the%20German%20think%20tank%20SWP.*

[17] Bureau of Land Management, Oil and Gas Statistics, Table 12: Time to Complete an Application for Permit to Drill (APD) Federal and Indian, *https://www.blm.gov/sites/default/files/docs/2023-02/FY22_Oil%20and%20Gas%20Statistics.zip.*

[18] Texas Railroad Commission, RRC Staff Processing Standard Drilling Permits in Two Days, *https://www.rrc.texas.gov/news/rrc-staff-processing-standard-drilling-permits-in-two-days/.*

critical. This is especially true when it comes to competing against China for the energy of the future.

SUBMITTED BY HON. SHELDON WHITEHOUSE,
A U.S. SENATOR FROM RHODE ISLAND

"This is the largest investment in the State of Georgia's history, one that will diversify and expand our economy while providing strong job opportunities for Georgians today and for generations to come!"

"I'm thrilled that Honda has once again committed to Ohio and our workers with today's announcement of a $3.5-billion investment in EV production and a new battery plant within Ohio's 15th Congressional District. [. . .] I look forward to working with Honda and LG Energy Solution to bring 2,200 new jobs to the Buckeye State."

"I am thrilled to welcome ENTEK to Terre Haute and to the Hoosier State. As the only American company to own and produce 'wet-process' lithium-ion battery separator materials, ENTEK is going to help to pave the way for electric vehicle production in Indiana and reduce American manufacturers' reliance on imported products. Their operation in Terre Haute will create hundreds of new jobs . . . !"

"I am honored to stand with other State and Federal leaders during this groundbreaking event as the first solar energy microgrid-powered industrial site project is unveiled in Jackson County. . . . I know this important project will . . . stimulate economic growth that will create new jobs in West Virginia!"

PREPARED STATEMENT OF HON. RON WYDEN,
A U.S. SENATOR FROM OREGON

The Finance Committee meets this morning for our first hearing on America's energy transformation since the Inflation Reduction Act became law.

Two years ago, almost to the day, this committee voted on the Clean Energy for America Act. In writing that legislation, our lodestar was developing a technology-neutral, market-oriented energy policy in which the more you reduce carbon emissions, the bigger your tax savings. The old status quo—big breaks for big oil, and major uncertainty for clean energy—was holding our economy back and stifling innovation in America.

Since Democrats passed the IRA, there has been an explosion of new investment announced in clean energy projects all over the country—wind energy, solar, electric vehicle manufacturing, energy storage.

So far, those announcements add up to nearly a quarter-trillion dollars of private investment coming off the sidelines and nearly 150,000 jobs created, many of which will not require a college degree. One new analysis broke the announcements down by State. I'll share a few examples relevant to this committee:

- North Carolina, $5.6 billion.
- South Carolina, $11 billion.
- Ohio, $7.8 billion—a big chunk of which is solar manufacturing that Senator Brown fought to ensure the bill would make possible.
- Texas, $5 billion.
- Tennessee, $5.6 billion.
- Michigan, $20 billion.

These projects are taking off all over the country, and they have exceeded expectations. These investments help cut carbon emissions. They help prevent the worst climate disasters. And they help fire up the economic engine for entire communities where the shovels are going into the ground.

A big part of our effort in the IRA was giving a special boost to coal towns and other communities built around extractive industry. The status quo failed them. Plants shuttered, and the people in those communities were too often overlooked and forgotten.

When we wrote the Inflation Reduction Act, people in coal towns had no bigger champion than Senator Casey. He worked to create a special program called "energy communities," which adds a bonus incentive to drive investment in struggling coal towns and areas with similar histories.

Senator Stabenow ensured that those communities would get an additional boost for advanced manufacturing. Senator Cortez Masto made sure the law would also attract investment to communities with areas known as brownfields, which are often the polluted remnants of old industrial facilities.

This work continues a longstanding effort by Finance Committee Democrats to look out for the interests of coal miners and their families. Senator Brown and Senator Casey fought for years to shore up the miners' health care and pensions. Senator Warner and Senator Carper were also cosponsors of the bill that got that done.

So colleagues, the IRA is major progress on clean energy that's just beginning to take off, now that the rules pertaining to energy communities were recently put in place.

The catch is, House Republicans want to repeal nearly all of the energy policies in the Inflation Reduction Act. That's what the McCarthy plan does.

It would be a major act of economic self-sabotage, because a majority of the investments announced since the IRA became law are going to States represented by Republican Senators.

I've heard members say that the IRA policies on energy were totally unnecessary, because these clean energy investments would have happened on their own. The reality is, the level of clean energy investment and job creation would not be anywhere near this high without the Inflation Reduction Act. The old system was holding this investment wave back.

Other members claim the IRA is somehow a threat to America's energy security. Wrong again. The IRA is all about lowering carbon emissions and creating jobs with clean, made-in-America energy. The U.S. will be less reliant on oil and gas, and that means that Americans will be less vulnerable if Vladimir Putin or other adversaries of the United States decide they want to create chaos and hike up prices.

Two years ago, members of this committee showed real guts to pass the bill that kicked off this energy transformation. They cast tough votes. They took on special interests.

And now the Inflation Reduction Act is proving that you can cut carbon emissions and create jobs and opportunity for Americans all at the same time.

I want to thank our witnesses for joining the committee.

THE CLEAN ENERGY BOOM IN THE STATES

EIGHTY-TWO SENATORS HAVE MORE THAN 142,000 NEW CLEAN ENERGY JOBS IN THEIR STATES

Since the landmark Inflation Reduction Act (IRA) became law in August 2022, the private sector has been racing forward with massive investments to build our clean energy future. New manufacturing in wind, solar, batteries, and electric vehicles—along with storage projects across the country—means new, good-paying jobs for hardworking Americans. In the months since the landmark climate and clean energy investments became law, clean energy companies have announced or moved forward with projects accounting for more than 142,000 new clean energy jobs for electricians, mechanics, construction workers, technicians, support staff, and many others.

At the same time as this massive clean energy boom is creating jobs in communities across the country, MAGA extremists in Congress have chosen this moment to try to repeal the IRA, killing clean energy jobs and reversing our nation's clean energy progress. This report analyzes the 191 clean energy projects in 41 states, represented by 82 Senators, that have moved forward since the passage of the IRA.

The report also analyzes clean energy projects represented by Senators serving on key "climate and clean energy" committees, finding that these Senators represent a majority of new clean energy jobs across the country. This includes Republican and Democratic Senators on the Senate Environment and Public Works Committee representing 48,361 new clean energy jobs, Senate Energy and Natural Resources Committee representing 52,354 jobs, Senate Appropriations Committee representing 66,955 jobs, Senate Finance Committee representing 65,154 jobs, and Senate Budget Committee representing 56,626 jobs. Senators serving on these five committees rep-

resent a majority of new clean energy jobs, 113,359, across 159 projects with $127,719,347,114 in investment.

THE CLEAN ENERGY BOOM IN 41 STATES ACROSS THE COUNTRY

States around the country have benefited from the provisions of the national clean energy plan. Even climate skeptics have touted the benefits of the law for their communities because they now understand that this clean energy plan means big investments and new jobs in their communities. Already, the new laws have significantly benefited local economies and will provide family-sustaining wages in ZIP codes from coast to coast. The local economic benefits will continue to spread across the country. In total, 82 Senators represent more than 142,000 jobs for electricians, mechanics, construction workers, technicians, support staff, and many others. A few highlights:

- Kansas leads the nation with the highest number of new clean energy jobs (20,600 jobs), followed by Michigan (13,702 jobs), New York (13,355 jobs), Georgia (12,888 jobs), Arizona (12,720 jobs), South Carolina (11,060 jobs), Nevada (10,800 jobs), Ohio (5,200 jobs), West Virginia (4,755 jobs) and Tennessee (3,850 jobs).
- The majority of the new clean energy projects are in 10 states: Arizona, California, Georgia, Michigan, New York, North Carolina, Ohio, South Carolina, Tennessee, and Texas.
- New York leads the nation with the greatest dollar investment in new clean energy projects with a total of $101.52 billion, followed by Michigan with $20.23 billion.

BY THE NUMBERS: 142,016 JOBS, 41 STATES, 82 SENATORS

STATE	R SENATORS	D SENATORS	# OF PROJECTS	TOTAL JOBS	TOTAL INVESTMENT
AL	KATIE BRITT, TOMMY TUBERVILLE		4	1,480	$1,338,000,000
AZ		MARK KELLY, KYRSTEN SINEMA	12	12,720	$8,310,000,000
CA		DIANNE FEINSTEIN, ALEX PADILLA	8	3,300	$5,457,100,000
CT		CHRIS MURPHY, RICHARD BLUMENTHAL	1	45	$25,100,000
CO		JOHN HICKENLOOPER, MICHAEL BENNET	5	1,467	$1,075,950,000
FL	MARCO RUBIO, RICK SCOTT		3	1,500	$451,000,000
GA		RAPHAEL WARNOCK, JOHN OSSOFF	14	12,888	$13,347,000,000
ID	MIKE CRAPO, JAMES RISCH		1	2,000	$15,000,000,000
IN	MIKE BRAUN, TODD YOUNG		4	717	$2,221,000,000
IA	JONI ERNST, CHUCK GRASSLEY		1	700	–
IL		RICHARD DURBIN, TAMMY DUCKWORTH	3	485	$895,000,000
KS	ROGER MARSHALL, JERRY MORAN		2	20,600	$4,000,000,000
KY	MITCH MCCONNELL, RAND PAUL		5	1,503	$3,269,564,400
LA	BILL CASSIDY, JOHN KENNEDY		3	230	$861,400,937
MA		ELIZABETH WARREN, EDWARD MARKEY	3	250	$200,000,000
ME	SUSAN COLLINS	ANGUS KING	1	200	$6,000,000

MD		CHRIS VAN HOLLEN, BEN CARDIN	1	460	$70,000,000
MI		GARY PETERS, DEBBIE STABENOW	14	13,702	$20,238,070,000
MN		TINA SMITH, AMY KLOBUCHAR	2	914	$575,000,000
MS	CINDY HYDE-SMITH, ROGER WICKER		1	300	$115,000,000
MO	JOSH HAWLEY, ERIC SCHMITT		1	150	$400,000,000
NV		CATHERINE CORTEZ MASTO, JACKY ROSEN	6	10,800	$4,544,811,711
NJ		ROBERT MENENDEZ, CORY BOOKER	2	200	$1,070,000,000
NM		BEN RAY LUJÁN, MARTIN HEINRICH	2	250	$404,000,000
NY		CHUCK SCHUMER, KRISTEN GILLI-BRAND	11	13,355	$101,522,000,000
NC	TED BUDD, THOM TILLIS		7	3,640	$9,590,525,233
ND	KEVIN CRAMER, JOHN HOEVEN		2	150	$871,872,271
OH	J.D. VANCE	SHERROD BROWN	9	5,200	$7,762,514,939
OK	JAMES LANKFORD, MARKWAYNE MULLIN		3	3,515	$1,450,000,000
OR		RON WYDEN, JEFF MERKELY	1	280	$1,000,000,000
RI		SHELDON WHITEHOUSE, JACK REED	2	1,850	$729,000,000
SC	LINDSEY GRAHAM, TIM SCOTT		14	11,060	$10,922,000,000
SD	MIKE ROUNDS, JOHN THUNE		2	1,280	$1,000,000,000
TN	MARSHA BLACKBURN, BILL HAGERTY		10	3,850	$5,600,800,849
TX	JOHN CORNYN, TED CRUZ		12	2,743	$4,953,700,000

BY THE NUMBERS: 142,016 JOBS, 41 STATES, 82 SENATORS—Continued

STATE	R SENATORS	D SENATORS	# OF PROJECTS	TOTAL JOBS	TOTAL INVESTMENT
UT	MIKE LEE, MITT ROMNEY		1	800	$11,000,000,000
VA		TIM KAINE, MARK WARNER	1	165	$37,000,000
VT		BERNIE SANDERS, PETER WELCH	1	12	–
WA		MARIA CANTWELL, PATTY MURRAY	4	800	$1,722,936,774
WV	SHELLEY MOORE CAPITO	JOE MANCHIN	4	4,755	$782,000,000
WI	RON JOHNSON	TAMMY BALDWIN	3	200	$345,000,000
N/A			5	1,500	–
TOTAL OF 142,016 JOBS					

SENATE CLIMATE COMMITTEE SNAPSHOTS

Thanks to the Biden administration's clean energy plan, billions of dollars are flooding into states represented by both Democrat and Republican Senators. These investments are popular. According to a recent poll from Navigator Research, the IRA is supported by 89% of Democrats, 62% of Independents, and 44% of Republicans.

Senators serving on the four key "climate and clean energy" committees represent a majority of new clean energy jobs across the country—113,359 jobs across 159 projects with $127,719,347,114 in investment. This includes Republican and Democratic Senators on the Senate Environment and Public Works Committee representing 48,361 new clean energy jobs, Senate Energy and Natural Resources Committees representing 52,354 jobs, Senate Appropriations Committee representing 66,955 jobs, Senate Finance Committee representing 65,154 jobs, and Senate Budget Committee representing 56,626 jobs. Senators serving on these four committees represent a majority of new clean energy jobs, 113,359, across 159 projects with a total investment of $127,719,347,114.

Senate Energy and Natural Resources Committee

Senators on the Energy and Natural Resources Committee represent 15 states with $46,093,971,693 in investment and 34,914 new clean energy jobs across 45 projects. The top 3 states for jobs are Arizona (12,720), Nevada (10,800), and West Virginia (4,755), represented on the committee by Democratic Senators Mark Kelly, Catherine Cortez Masto, and Joe Manchin, respectively.

BY THE NUMBERS: STATES REPRESENTED BY SENATORS ON THE ENERGY AND NATURAL RESOURCES COMMITTEE				
STATE	SENATOR	# OF PROJECTS	TOTAL JOBS	TOTAL INVESTMENT
WV	JOE MANCHIN (D)*Chair	4	4,755	$782,000,000
WY	JOHN BARRASSO (R)*Ranking Member	-	-	-
OR	RON WYDEN (D)	1	280	$1,000,000,000
ID	JAMES RISCH (R)	1	2,000	$15,000,000,000
WA	MARIA CANTWELL (D)	4	800	$1,722,936,774
UT	MIKE LEE (R)	1	800	$11,000,000,000
VT	BERNIE SANDERS (D)	1	12	-
MT	STEVE DAINES (R)	-	-	-
NM	MARTIN HEINRICH (D)	2	250	$404,000,000
AK	LISA MURKOWSKI (R)	-	-	-
HI	MAZIE HIRONO (D)	-	-	-
ND	JOHN HOEVEN (R)	2	150	$871,872,271
ME	SUSAN COLLINS (R)	1	200	$6,000,000
LA	BILL CASSIDY (R)	3	230	$861,400,937
NV	CATHERINE CORTEZ MASTO (D)	6	10,800	$4,544,811,711
MS	CINDY HYDE-SMITH (R)	1	300	$115,000,000
AZ	MARK KELLY (D)	12	12,720	$8,310,000,000
MO	JOSH HAWLEY (D)	1	150	$400,000,000
CO	JOHN HICKENLOOPER (D)	5	1,467	$1,075,950,000
TOTALS		**45**	**34,914**	**$46,093,971,693**

Senate Environment and Public Works Committee

Senators on the Environment and Public Works Committee represent 13 states with $50,145,042,271 in investment and 52,354 new clean energy jobs across 66 projects. The top 3 states for jobs are Michigan (13,702), Arizona (12,720), and South Carolina (11,060) represented on the committee by Senators Debbie Stabenow, Mark Kelly, and Lindsey Graham.

BY THE NUMBERS:
STATES REPRESENTED BY SENATORS ON THE ENVIRONMENT AND PUBLIC WORKS COMMITTEE

STATE	SENATOR	# OF PROJECTS	TOTAL JOBS	TOTAL INVESTMENT
DE	TOM CARPER (D)*Chair	-	-	-
WV	SHELLEY MOORE CAPITO (R)**	4	4,755	$782,000,000
MD	BEN CARDIN (D)	1	460	$70,000,000
ND	KEVIN CRAMER (R)	2	150	$871,872,271
VT	BERNIE SANDERS (D)	1	12	-
RI	SHELDON WHITEHOUSE (D)	2	1,850	$729,000,000
OR	JEFF MERKLEY (D)	1	280	$1,000,000,000
MA	EDWARD MARKEY (D)	3	250	$200,000,000
MI	DEBBIE STABENOW (D)	14	13,702	$20,238,070,000
AZ	MARK KELLY (D)	12	12,720	$8,310,000,000
CA	ALEX PADILLA (D)	8	3,300	$5,457,100,000
PA	JOHN FETTERMAN (D)	-	-	-
WY	CYNTHIA LUMMIS (R)	-	-	-
OK	MARKWAYNE MULLIN (R)	3	3,515	$1,450,000,000
NE	PETE RICKETTS (R)	-	-	-
AR	JOHN BOOZMAN (R)	-	-	-
MS	ROGER WICKER (R)	1	300	$115,000,000
AK	DAN SULLIVAN (R)	-	-	-
SC	LINDSEY GRAHAM (R)	14	11,060	$10,922,000,000
TOTALS		**66**	**52,354**	**$50,145,042,271**

***RANKING MEMBER*

Senate Finance Committee

Senators on the Finance Committee represent 22 states with $90,394,710,443 in investment and 65,109 new clean energy jobs across 108 projects. The top 3 states for jobs are Michigan (13,702), South Carolina (11,060), and Nevada (10,800) represented on the committee by Senators Debbie Stabenow, Tim Scott, and Catherine Cortez Masto.

BY THE NUMBERS: STATES REPRESENTED BY SENATORS ON THE FINANCE COMMITTEE				
STATE	SENATOR	# OF PROJECTS	TOTAL JOBS	TOTAL INVESTMENT
OR	RON WYDEN (D)*Chair	1	280	$1,000,000,000
ID	MIKE CRAPO (R)*Ranking Member	1	2,000	$15,000,000,000
MI	DEBBIE STABENOW (D)	14	13,702	$20,238,070,000
IA	CHUCK GRASSLEY (R)	1	700	-
WA	MARIA CANTWELL (D)	4	800	$1,722,936,774
TX	JOHN CORNYN (R)	12	2,743	$4,953,700,000
NJ	ROBERT MENENDEZ (D)	2	200	$1,070,000,000
SD	JOHN THUNE (R)	2	1280	$1,000,000,000
DE	TOM CARPER (D)	-	-	-
SC	TIM SCOTT (R)	14	11,060	$10,922,000,000
MD	BEN CARDIN (D)	1	460	$70,000,000
LA	BILL CASSIDY (R)	3	230	$861,400,937
OH	SHERROD BROWN (D)	9	5,200	$7,762,514,939
OK	JAMES LANKFORD (R)	3	3,515	$1,450,000,000
CO	MICHAEL BENNET (D)	5	1,467	$1,075,950,000
MT	STEVE DAINES (R)	-	-	-
PA	BOB CASEY (D)	-	-	-
IN	TODD YOUNG (R)	4	717	$2,221,000,000
VA	MARK WARNER (D)	1	165	$37,000,000
WY	JOHN BARRASSO (R)	-	-	-
RI	SHELDON WHITEHOUSE (D)	2	1,850	$729,000,000
WI	RON JOHNSON (R)	3	200	$345,000,000
NH	MAGGIE HASSAN (D)	-	-	-
NC	THOM TILLIS (R)	7	3,640	$9,590,525,233
NV	CATHERINE CORTEZ MASTO (D)	6	10,800	$4,544,811,711
TN	MARSHA BLACKBURN (R)	10	3,850	$5,600,800,849
MA	ELIZABETH WARREN (D)	3	250	$200,000,000
TOTALS		**108**	**65,109**	**$90,394,710,443**

Senate Appropriations Committee

Senators on the Appropriations Committee represent 21 states with $59,103,845,231 in investment and 67,000 new clean energy jobs across 88 projects. The top 3 states for jobs are Kansas (20,600), Michigan (13,702), and South Carolina (11,060) represented on the committee by Sentors Jerry Moran, Gary Peters, and Lindsey Graham.

BY THE NUMBERS: STATES REPRESENTED BY SENATORS ON THE APPROPRIATIONS COMMITTEE				
STATE	SENATOR	# OF PROJECTS	TOTAL JOBS	TOTAL INVESTMENT
WA	PATTY MURRAY (D)*Chair	4	800	$1,722,936,774
ME	SUSAN COLLINS (R)*Vice Chair	1	200	$6,000,000
CA	DIANNE FEINSTEIN (D)	8	3,300	$5,457,100,000
KY	MITCH MCCONNELL (R)	5	1,503	$3,269,564,400
IL	RICHARD DURBIN (D)	3	485	$895,000,000
AK	LISA MURKOWSKI (R)	-	-	-
RI	JACK REED (D)	2	1,850	$729,000,000
SC	LINDSEY GRAHAM (R)	14	11,060	$10,922,000,000
MT	JOHN TESTER (D)	-	-	-
KS	JERRY MORAN (R)	2	20,600	$4,000,000,000
NH	JEANNE SHAHEEN (D)	-	-	-
ND	JOHN HOEVEN (R)	2	150	$871,872,271
OR	JEFF MERKLEY (D)	1	280	$1,000,000,000
AR	JOHN BOOZMAN (R)	-	-	-
DE	CHRISTOPHER COONS (D)	-	-	-
WV	SHELLEY MOORE CAPITO (R)	4	4,755	$782,000,000
HI	BRIAN SCHATZ (D)	-	-	-
LA	JOHN KENNEDY (R)	3	230	$861,400,937
WI	TAMMY BALDWIN (D)	3	200	$345,000,000
MS	CINDY HYDE-SMITH (R)	1	300	$115,000,000
CT	CHRIS MURPHY (D)	1	45	$25,100,000
TN	BILL HAGERTY (R)	10	3,850	$5,600,800,849
WV	JOE MANCHIN (D)	4	4,755	$782,000,000
AL	KATIE BRITT (R)	4	1,480	$1,338,000,000
MD	CHRIS VAN HOLLEN (D)	1	460	$70,000,000
FL	MARCO RUBIO (R)	3	1,500	$451,000,000
NM	MARTIN HEINRICH (D)	2	250	$404,000,000
NE	DEB FISCHER (R)	-	-	-
MI	GARY PETERS (D)	14	13,702	$20,238,070,000
TOTALS		**88**	**67,000**	**$59,103,845,231**

Senate Budget Committee

Senators on the Budget Committee represent 17 states with $59,458,507,711 in investment and 56,626 new clean energy jobs across 65 projects. The top 3 states for jobs are Kansas (20,600), Michigan (13,702), and South Carolina (11,060), represented on the committee by Senators Roger Marshall, Debbie Stabenow, and Lindsey Graham.

BY THE NUMBERS: STATES REPRESENTED BY SENATORS ON THE BUDGET COMMITTEE				
STATE	SENATOR	# OF PROJECTS	TOTAL JOBS	TOTAL INVESTMENT
RI	SHELDON WHITEHOUSE (D)*Chair	2	1,850	$729,000,000
IA	CHUCK GRASSLEY (R)*Ranking Member	1	700	-
WA	PATTY MURRAY (D)	4	800	$1,722,936,774
OR	RON WYDEN (D)	1	280	$1,000,000,000
MI	DEBBIE STABENOW (D)	14	13,702	$20,238,070,000
VT	BERNIE SANDERS (D)	1	12	-
VA	MARK WARNER (D)	1	165	$37,000,000
OR	JEFF MERKLEY (D)	1	280	$1,000,000,000
VA	TIM KAINE (D)	1	165	$37,000,000
MD	CHRIS VAN HOLLEN (D)	1	460	$70,000,000
NM	BEN RAY LUJÁN (D)	2	250	$404,000,000
CA	ALEX PADILLA (D)	8	3,300	$5,457,100,000
IA	MIKE CRAPO (R)	1	700	-
SC	LINDSEY GRAHAM (R)	14	11,060	$10,922,000,000
WI	RON JOHNSON (R)	3	200	$345,000,000
UT	MITT ROMNEY (R)	1	800	$11,000,000,000
KS	ROGER MARSHALL (R)	2	20,600	$4,000,000,000
IN	MIKE BRAUN (R)	4	717	$2,221,000,000
LA	JOHN KENNEDY (R)	3	230	$861,400,937
FL	RICK SCOTT (R)	3	1,500	$451,000,000
UT	MIKE LEE (R)	1	800	$11,000,000,000
TOTALS		**65**	**56,626**	**$59,458,507,711**

METHODOLOGY

This report analyzes public announcements from the private sector since the passage of the IRA. It builds on Climate Power's full analysis of all 191 public announcements from the private sector between August 16, 2022 to March 31, 2023.

From PBS News Hour, Politics, February 24, 2023

U.S. JUDGE WON'T BLOCK HUGE LITHIUM MINE ON NEVADA-OREGON LINE

By Scott Sonner, Associated Press

RENO, NV (AP)—A federal judge has sided again with the Biden administration and a Canadian-based mining company in a high-stakes legal battle with environmentalists and tribal leaders trying to block a huge lithium mine in Nevada near the Oregon line.

U.S. District Judge Miranda Du in Reno denied the opponents' request Friday for an emergency injunction to prohibit work at the largest known lithium deposit in the nation until the 9th U.S. Circuit Court of Appeals can hear their latest appeal.

Her ruling clears the way for Lithium Americas' subsidiary Lithium Nevada to begin construction as early as next week at the mine they say would speed production of raw materials for electric vehicle batteries critical to combating climate change.

Opponents say the mine would destroy key wildlife habitat and sacred cultural treasures, harm groundwater and pollute the air.

The conflict is driven largely by what Du described Friday as "tension" between environmental and economic trade-offs associated with efforts to speed the transition from fossil fuels emitting greenhouse gases to cleaner, renewable energy sources. It also wades into evolving legal interpretations of the reach of a 150-year-old mining law that could eventually prove more onerous to mining companies.

Her new ruling marks the third time in two years she has refused to grant injunctions sought by the conservationists, Native American tribes and a Nevada rancher who lives near the mine 200 miles (322 kilometers) northeast of Reno.

Opponents argued in their request for an emergency court order last week that without it, the developer would begin to rip up a high-desert sea of sagebrush that holds some of the most critical habitat still intact for the dwindling sage grouse in the West.

Du said she denied the latest request because she concluded the plaintiffs were unlikely to prevail on an appeal challenging her February 6th ruling that found the Bureau of Land Management complied with federal law—with one exception—when it approved plans for the Thacker Pass mine in January 2021.

Du said in Friday's 11-page ruling that she understood when she issued her decision earlier this month that it meant "Lithium Nevada could start construction on the project, and thus disrupt the sagebrush ecosystem within the project area."

"The court indeed expects that Lithium Nevada unfortunately will soon begin ripping out sage brush that will not grow back for a very long time," she wrote.

Du said the government and Lithium Nevada argue that the project will "on balance, be environmentally beneficial because the lithium produced from the mine will enable various clean technologies."

"And there is, if nothing else, a tension between the macro environmental benefit that could result from the project and the micro (relatively speaking) environmental harm that will likely flow from" allowing the mine to go forward, she said. "This court does not resolve that tension here."

The environmentalists' latest challenge centered on the reach of mining rights claimed under the 1872 Mining Law to neighboring lands where a developer plans to dispose of waste rock and tailings—in this case, 1,300 acres (526 hectares) where waste would be dumped from an open pit mine as deep as the length of a football field.

Last year, in a potentially precedent-settling ruling, the 9th Circuit upheld a lower court ruling that voided the Forest Service's approval of Rosemont Copper's mine in Arizona because the service failed to establish—or even consider—whether the company had valid rights where the waste dump was planned.

Both the service and the Bureau of Land Management long have maintained the same mining rights automatically extend to such lands.

Du said in her February 6th ruling she was adopting the 9th Circuit's new standard, but instead of vacating BLM's approval of the Thacker Pass mine, she directed the agency to go back and determine whether such rights exist on the neighboring land.

Opponents of the mine said that instead of allowing BLM to revisit that matter and "fix its error," she should have ordered a "wholesale re-evaluation" of the entire mining project.

Because the company has no rights to dump waste on the neighboring lands, BLM "approved what is now essentially half a mine," they said in their final brief filed Thursday.

Without an injunction, Lithium Nevada "will consider itself free to blast and excavate the mine pit, construct the sulfuric acid processing plant and build other facilities on thousands of acres of public land, to produce waste rock and tailings with nowhere to legally put them," they said.

Du said Friday she allowed BLM to revisit the matter partly because the 9th Circuit's latest interpretation of the law came more than a year after the agency approved the Thacker Pass mine, and partly because of the "serious possibility that BLM could fix its error."

NUCLEAR INNOVATION ALLIANCE
https://nuclearinnovationalliance.org/

Advanced Nuclear Energy Tax Provisions in the Inflation Reduction Act of 2022

On August 16, 2022, President Biden signed the Inflation Reduction Act (IRA), creating two new technology-neutral tax credits for zero-emitting, clean energy projects: a Clean Electricity Production Tax Credit (PTC) and a Clean Electricity Investment Tax Credit (ITC). The technology tax credits are intended to accelerate deployment of clean energy technologies, including advanced nuclear reactors. A project developer could elect either tax credit, but not both. Below is a summary of the two new tax credits that advanced nuclear energy projects can choose from:

Advanced Nuclear PTC and ITC

Tax Provision	Value without satisfying wages and apprenticeship requirement	Value with satisfying wages and apprenticeship requirement	Additional booster(s)
Clean Electricity Production Credit (PTC)	0.5 cent/kWh*	2.5 cents/kWh*	10% domestic content bonus
			10% booster if project located within an energy community
Clean Electricity Investment Credit (ITC)	6% of initial capital cost	30% of initial capital cost	10 percentage point domestic content bonus
			10 percentage points if project is placed within an energy community

*The Clean Electricity Production Credit is adjusted for inflation every year and the values in this table are given in 2021 dollars.

As shown above, IRA encourages clean energy project developers to invest in workers and communities by boosting the tax credits for projects that pay prevailing wages, provide for apprenticeships, and/or are sited in energy communities. Municipal power companies or tax-exempt cooperatives are eligible for "direct pay," which means they can receive a payment from the government in lieu of a tax credit. For private entities, the tax credits are transferable to any other taxpayer. To be eligible for either credit, projects must be placed in service after December 31, 2024. (This is an important improvement relative to the House-passed Build Back Better bill that tied eligibility to commencing construction after December 2026.) The PTC would be available for electricity produced during a facility's first 10 years of operation. The credits begin to phase out for new facilities that commence construction after 2032, or when power sector greenhouse gas emissions decline by 75% relative to 2022 levels, whichever is later. Each credit would phase out over a three-year period—75% of the initial value after the first year, 50% of the initial value after the second year, and then 0% after the third year.

Another important incentive in the IRA is a "Clean Hydrogen" Production Tax Credit. Hydrogen produced from nuclear power plants will be eligible for the tax credit. The Hydrogen PTC base value is $0.60/kg, rising to $3.00/kg of clean hydrogen produced for projects that pay prevailing wages, provide for apprenticeships, and/or are

sited in energy communities. For more information about tax policies in the IRA and tax policy analysis for advanced nuclear energy projects, please contact Victor Ibarra Jr. at the Nuclear Innovation Alliance *(vibarrajr@nuclearinnovationalliance.org).*

COMMUNICATIONS

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Statement of Michael G. Bindner

Chairman Wyden and the Ranking Member Crapo, thank you for the opportunity to submit these comments for the record. I am repeating my comments to Ways and Means of April 19th on the U.S. Tax Code Subsidizing Handouts and the Chinese Communist Party. The subject matter is the same in many respects, but the irony is thick.

The Climate Crisis is real. It did not go away because La Nina rain events started again, likely due to the Tongan volcano disrupting the El Nino cycle. The fact that El Nino was stuck is likely due to climate change, however.

Florida is not saved by the new rains. Indeed, these have made coastal flooding caused by rising sea levels worse. That sea levels have risen due to arctic ice melt is definitely an artifact of global warming. If something is not done, even The Villages will be underwater before the century is out.

From comments presented to the Finance Committee in April of 2021, on Climate Challenges on Warming in general, there is no doubt that it is man-made. While there was a warm period around the first millennium, we came to it gradually. Industrialization may have ended what is called the Little Ice Age, but that warming is sudden and has dire consequences. We do not know that it will stop the way it did in the Middle Ages, indeed, it is not likely to, which makes these hearings vital.

Starting with the coasts, there will be sea level rise. Indeed, the flooding shown in Vice President Gore's latest film shows how bad it is getting. The wealthy don't seem to care, because they have flood insurance. The most basic step to at least get wealthier taxpayers on board (including the upper middle class) is to cap flood insurance benefits to a level where beach houses properties can no longer be insured. Even that small step could never be enacted. Too many donors have beach houses.

This is a bigger problem for some than the catch of the day, particularly in the Indo-Pacific region. In comments to the Finance Committee on Strategic Climate Engagement in the Indo-Pacific Region in March 2022 Warming in the United States is merely inconvenient. In the Indo-Pacific region, it will be deadly. Island nations and Bangladesh will simply be eliminated. This constitutes a large share of the global population. Java has 154 million people in the same space that the United States has 53 million in the Boston-Washington urban cluster. Visualize relocating them.

We agree that the current tax benefits for electric cars and renewables are the wrong approach. That does not mean that the oil and gas companies deserve a free pass, as I discuss below. There are alternatives that do not rely on Chinese wind turbines or solar panels. To be clear, the reason China produces these things is because their labor is cheap. It is so cheap that they are likely to have a Marxist revolution where the peasants rise up against the Communist Party.

Of course, such revolutions are stuff of myth. Without determined leadership, there are no peasant uprisings. Middle classes revolt, not workers. The Chinese economic revolution is creating a middle class as peasants in the countryside become peasants in the city, but without urban rights. One must actually own a home to have rights within the cities to health care and other human services. It harkens back to early America, where only White male landholders could vote.

As the Chinese middle class grows, it has not been added to the Communist Party. This will result in a revolution against it. Corrupt parties find it hard to broaden the base. If they were to do so, Chinese leaders would develop a sense of humor, which is absolutely necessary to go beyond tyranny and into freedom. The Party will either modernize or be overthrown. Its recent rollback on COVID testing shows that it has become sensitive to keeping its middle class happy. Now that there is blood in the water, evolution or revolution is certain.

China makes solar cells and turbines because its labor is cheap—although it will not remain that way. Other nations will be cheaper soon, although hopefully they will be advised by someone other than the International Monetary Fund so that their populations can more easily develop into consumer societies with empowered workers.

China has pulled back on the Belt and Road Initiative. It has its own financial crisis so, instead of extending new credit, it is turned into a debt collector. Were it not for a desire to sell consumer goods (and solar panels) to the United States, it would sell its supply of Treasury Bills.

Let me emphasize this. Goods sold in WalMart and solar and wind energy systems have the same profit flows to the soon-to-be-overthrown Communist Party. To condemn one and not the other **does not exactly demonstrate clear thinking by the new majority.**

The solution to both problems is tax policy. Not repealing the Biden tax policies favoring renewable energy, but our allergy to conforming to tax policy in the rest of the developed world. These policies are a boon to consumers, especially wealthier consumers who are also donors. They are not so good for workers.

If the United States had a goods and services tax, the wealthy elite could not avoid taxation by borrowing from their asset portfolios to fund consumption. To end this tax dodge, tax consumption. Taxing asset value gains at sale rather than taxing end of the year results also leaves money on the table, but that is a discussion for another day. Please see our paper on taxes and trade policy in the first attachment for how credit invoice AND subtraction value-added taxes will impact both trade policy and workers. The second attachment lays out our entire tax proposal.

The Biden energy provisions are not even a drop in the bucket. They were a (successful) olive branch to Senators Sanders and Markey. Not much more.

Burning gasoline has taken us over the line on warming, catching up with coal. The burning of coal, especially by China, creates acute pollution—the kind that gave me asthma when I lived downwind from an Ohio Edison Plant in Dayton, Ohio and the kind which your grandchildren will get if we continue to burn it. Coal is also a radiation danger. It turns out that when coal is burnt, more radioactive material is added to the environment than the entire nuclear power system emits.

Increasing nuclear power is an environmentally sustainable path, but it will only occur when the demand for more electricity rises as we move away from using gasoline in our cars. Getting this enacted is as likely, for now, as improving environmental and labor trade enforcement and limiting flood insurance.

Employee owners and forward-thinking communities can step in where the market will not. In testimony to the Energy and Water Appropriations Subcommittee, I describe an experiment to build an integrated system for providing electric power for cars and trucks, while reinventing the grid, that relied on overhead roof decks to transfer power to vehicles in the same way electric trains and buses work. Please see an excerpt in the attachments.

We don't need to drill for or export more oil. We need much less. Electric vehicles run on roof-covered overhead power lines (and with control from central computers) end the need to burn gasoline in urban areas WITHOUT the use of questionably resourced lithium ion batteries and without the need to expand our electric grid into the wind or by catching a ray of sunshine. Technology from 100 years ago, combined with the latest in nuclear energy can both clean the air and cool the planet down, and do so much more quickly than the entire Biden energy portfolio.

Thank you for this opportunity to share these ideas with the committee. As always, we are available to meet with members and staff or to provide direct testimony on any topic you wish.

Attachment One—Trade Policy

Consumption taxes could have a big impact on workers, industry and consumers. Enacting an I–VAT is far superior to a tariff. The more government costs are loaded onto an I–VAT the better.

If the employer portion of Old-Age and Survivors Insurance, as well as all of disability and hospital insurance are decoupled from income and credited equally and personal retirement accounts are not used, there is no reason not to load them onto an I–VAT. This tax is zero rated at export and fully burdens imports.

Seen another way, to not put as much taxation into VAT as possible is to enact an unconstitutional export tax. Adopting an I–VAT is superior to its weak sister, the Destination Based Cash Flow Tax that was contemplated for inclusion in the TCJA. It would have run afoul of WTO rules on taxing corporate income. I–VAT, which taxes both labor and profit, does not.

The second tax applicable to trade is a Subtraction VAT or S–VAT. This tax is designed to benefit the families of workers through direct subsidies, such as an enlarged child tax credit, or indirect subsidies used by employers to provide health insurance or tuition reimbursement, even including direct medical care and elementary school tuition. As such, S–VAT cannot be border adjustable. Doing so would take away needed family benefits. As such, it is really part of compensation. While we could run all compensation through the public sector.

The S–VAT could have a huge impact on long term trade policy, probably much more than trade treaties, if one of the deductions from the tax is purchase of employer voting stock (in equal dollar amounts for each worker). Over a fairly short period of time, much of American industry, if not employee-owned outright (and there are other policies to accelerate this, like ESOP conversion) will give workers enough of a share to greatly impact wages, management hiring and compensation and dealing with overseas subsidiaries and the supply chain—as well as impacting certain legal provisions that limit the fiduciary impact of management decision to improving short-term profitability (at least that is the excuse managers give for not privileging job retention).

Employee owners will find it in their own interest to give their overseas subsidiaries and their supply chain's employees the same deal that they get as far as employee ownership plus an equivalent standard of living. The same pay is not necessary, currency markets will adjust once worker standards of living rise. Attachment Two further discusses employee ownership.

Over time, ownership will change the economies of the nations we trade with, as working in employee-owned companies will become the market preference and force other firms to adopt similar policies (in much the same way that, even without a tax benefit for purchasing stock, employee-owned companies that become more democratic or even more socialistic, will force all other employers to adopt similar measures to compete for the best workers and professionals).

In the long run, trade will no longer be an issue. Internal company dynamics will replace the need for trade agreements as capitalists lose the ability to pit the interest of one nation's workers against the others. This approach is also the most effective way to deal with the advance of robotics. If the workers own the robots, wages are swapped for profits with the profits going where they will enhance consumption without such devices as a guaranteed income.

Attachment Two—Tax Reform, Center for Fiscal Equity, March 24, 2023

Synergy: The President's Budget for 2024 proposes a 25% minimum tax on high incomes. Because most high income households make their money on capital gains, rather than salaries, an asset value-added tax replacing capital gains taxes (both long and short term) would be set to that rate. The top rate for a subtraction VAT surtax on high incomes (wages, dividends and interest paid) would be set to 25%, as would the top rate for income surtaxes paid by very high income earners. Surtaxes collected by businesses would begin for any individual payee receiving $75,000 from any source at a 6.25% rate and top out at 25% at all such income over $375,000. At $450,000, individuals would pay an additional 6.25% on the next $75,000 with brackets increasing until a top rate of 25% on income over $750,000. This structure assures that no one games the system by changing how income is earned to lower their tax burden.

Individual payroll taxes. A floor of $20,000 would be instituted for paying these taxes, with a ceiling of $75,000. This lower ceiling reduces the amount of benefits received in retirement for higher-income individuals. The logic of the $20,000 floor

reflects full-time work at a $10 per hour minimum wage offered by the Republican caucus in response to proposals for a $15 wage. The majority needs to take the deal. Doing so in relation to a floor on contributions makes adopting the minimum wage germane in the Senate for purposes of Reconciliation. The rate would be set at 6.25%.

Employer payroll taxes. Unless taxes are diverted to a personal retirement account holding voting and preferred stock in the employer, the employer levy would be replaced by a goods and receipts tax of 6.25%. Every worker who meets a minimum hour threshold would be credited for having paid into the system, regardless of wage level. All employees would be credited on an equal dollar basis, rather than as a match to their individual payroll tax. The tax rate would be adjusted to assure adequacy of benefits for all program beneficiaries.

High-income Surtaxes. As above, taxes would be collected on all individual income taxes from salaries, income and dividends, which exclude business taxes filed separately, starting at $400,000 per year. This tax will fund net interest on the debt (which will no longer be rolled over into new borrowing), redemption of the Social Security Trust Fund, strategic, sea and non-continental U.S. military deployments, veterans' health benefits as the result of battlefield injuries, including mental health and addiction and eventual debt reduction.

Asset Value-Added Tax (A–VAT). A replacement for capital gains taxes and the estate tax. It will apply to asset sales, exercised options, inherited and gifted assets and the profits from short sales. Tax payments for option exercises, IPOs, inherited, gifted and donated assets will be marked to market, with prior tax payments for that asset eliminated so that the seller gets no benefit from them. In this perspective, it is the owner's increase in value that is taxed. As with any sale of liquid or real assets, sales to a qualified broad-based Employee Stock Ownership Plan will be tax free. These taxes will fund the same spending items as high-income and subtraction VAT surtaxes. There will be no requirement to hold assets for a year to use this rate. This also implies that this tax will be levied on all eligible transactions.

The 3.8% ACA–SM tax will be repealed as a separate tax, with health care funding coming through a subtraction value-added tax levied on all employment and other gross profit. The 25% rate is meant to be a permanent compromise, as above. Any changes to this rate would be used to adjust subtraction VAT surtax and high income surtax rates accordingly. This rate would be negotiated on a world-wide basis to prevent venue seeking for stock trading.

Subtraction Value-Added Tax (S–VAT). Corporate income taxes and collection of business and farm income taxes will be replaced by this tax, which is an employer paid Net Business Receipts Tax. S–VAT is a vehicle for tax benefits, including

- Health insurance or direct care, including veterans' health care for non-battlefield injuries and long-term care.
- Employer-paid educational costs in lieu of taxes are provided as either employee-directed contributions to the public or private unionized school of their choice or direct tuition payments for employee children or for workers (including ESL and remedial skills). Wages will be paid to students to meet opportunity costs.
- Most importantly, a refundable child tax credit at median income levels (with inflation adjustments) distributed with pay.

Subsistence level benefits force the poor into servile labor. Wages and benefits must be high enough to provide justice and human dignity. This allows the ending of state administered subsidy programs and discourages abortions, and as such enactment must be scored as a must pass in voting rankings by pro-life organizations (and feminist organizations as well). To assure child subsidies are distributed, S–VAT will not be border adjustable.

As above, S–VAT surtaxes are collected on all income distributed over $75,000, with a beginning rate of 6.25%. replace income tax levies collected on the first surtaxes in the same range. Some will use corporations to avoid these taxes, but that corporation would then pay all invoice and subtraction VAT payments (which would distribute tax benefits). Distributions from such corporations will be considered salary, not dividends.

Invoice Value-Added Tax (I–VAT). Border adjustable taxes will appear on purchase invoices. The rate varies according to what is being financed. If Medicare for All does not contain offsets for employers who fund their own medical personnel or

for personal retirement accounts, both of which would otherwise be funded by an S–VAT, then they would be funded by the I–VAT to take advantage of border adjustability.

I–VAT forces everyone, from the working poor to the beneficiaries of inherited wealth, to pay taxes and share in the cost of government. As part of enactment, gross wages will be reduced to take into account the shift to S–VAT and I–VAT, however net income will be increased by the same percentage as the I–VAT. Inherited assets will be taxed under A–VAT when sold. Any inherited cash, or funds borrowed against the value of shares, will face the I–VAT when sold or the A–VAT if invested.

I–VAT will fund domestic discretionary spending, equal dollar employer OASI contributions, and non-nuclear, non-deployed military spending, possibly on a regional basis. Regional I–VAT would both require a constitutional amendment to change the requirement that all excises be national and to discourage unnecessary spending, especially when allocated for electoral reasons rather than program needs. The latter could also be funded by the asset VAT (decreasing the rate by from 19.25% to 13%).

Carbon Added Tax (C–AT). A Carbon tax with receipt visibility, which allows comparison shopping based on carbon content, even if it means a more expensive item with lower carbon is purchased. C–AT would also replace fuel taxes. It will fund transportation costs, including mass transit, and research into alternative fuels. This tax would not be border adjustable unless it is in other nations, however in this case the imposition of this tax at the border will be noted, with the U.S. tax applied to the overseas base.

Energy and Water Development Appropriation for FY 2024

This testimony to the Energy and Water Subcommittee for FY 2024 proposes spending for a Department of Energy solicitation(s) for $500 million in grants to prototype a tethered electric car system in the first year, first on a testbed and then in one or more small town. . . . To pay for this project, I propose Congress **eliminate all funding** for designing intelligent cars and some of the funding for developing charging stations and better batteries.

Enough batteries have caught fire and have questionable supply chains and resource needs and enough automated cars have crashed into trees or humans to know that it is time to try something else. There are better modalities and they are available now. We said this a year ago and, at least as far as self-driving vehicles, this is still true. Indeed, projects to design these monsters are being ended left and right in industry.

Research funds can instead focus on the development of automated cars with central control (rather than its own AI) and energy distribution (rather than being hampered by economically damaging battery development). This is old and proven technology, *i.e.,* electric trains and buses.

The first set of grants would be given to automotive companies with a matching funds requirement to develop the technical specifications, prototype design and testing.

The second set of grants would go to small cities or towns with one or two major employers. Employers, municipalities, financial institutions and local retailers, as well as a consortium of car companies who performed well on the first set of grants, as well as state government and existing road providers, power and Internet companies would partner with the Departments of Energy and Transportation to install and implement the system tested in round one.

At least one grant consortium will be for cities in a predominantly rural area. This project will develop interfaces between urban/suburban and rural transportation systems, as outside of urban areas, use of the current gasoline based infrastructure will be required—or some form of hydrogen combustion with hydrogen produced by vehicles through electrolysis while attached to the electric grid system.

Second round projects will, if successful, be a guide for funding these systems in urban areas. A third round of grants (possibly concurrent) will design and prototype interstate systems with separate electrified roadways for passenger cars, high speed rail, busses and trucks and freight rail.

As in urban areas, these roadways would be covered with a roof deck upon which grass can be grown in climates that allow this, along with the deployment of solar panels over the grass. Such a mixture provides shade to the grass and cools the

solar panels so that they can operate optimally. Irrigation systems may also be included to accomplish both.

The final project would integrate the system with the banking system and include both individual car ownership and cars for higher. Individuals could own cars, while some vehicles would be for hire (with monitoring, but not drivers). Car owners could even rent their vehicles to the system. Debit cards or a link to checking accounts would pay for the car itself (either to rent or own), the roadway and the use of energy and computer services.

Prices for accessing the road network would vary based on congestion and vehicles could be taken to a public transportation hub (which might be located at their children's school), with the vehicle returning home empty or going to the next fare. If congestion is low, it may be affordable to drive to work. If it is high, prices for public transit and commuting would be adjusted accordingly.

Energy infrastructure to power the system and facilitate communication would also carry energy and data services, so add Xfinity and Cox to the consortium. This also gives us the incentive to improve the grid. We only need willingness to do this. The technology is already there.

NATSO AND SIGMA
1330 Braddock Place, Suite 501
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NATSO, Representing America's Travel Centers and Truckstops, and SIGMA: America's Leading Fuel Marketers (together, the "Associations")[1] appreciate that the Committee has convened a hearing on energy tax incentives included in the Inflation Reduction Act ("IRA"). We are grateful for the opportunity to highlight our support for a technology-neutral approach to energy tax policies within the Committee's jurisdiction.

The Associations represent more than 80 percent of retail fuel sales in the United States. Our membership includes national travel centers and convenience store chains annually grossing billions of dollars, as well as smaller businesses, including single-location operators. The retail fuels and convenience industry provides 2.38 million jobs at approximately 120,000 retail establishments across the country. Our membership has been at the cutting edge of low-carbon transportation energy investments for more than a decade, and has deftly responded to policy signals intended to improve transportation energy's emissions profile. In so doing, fuel retailers have always functioned as surrogates for the consumer, competing with one another to identify the most reliable, lowest-cost transportation energy available, and deliver that energy to every community in the country.

Biofuel and renewable fuel incentives work to build and maintain a competitive marketplace, maximize the climate benefits of renewable fuels, and minimize fuel supply disruptions and inflationary consequences for consumers. The biodiesel blenders' tax credit has worked successfully to build a robust biodiesel and renewable diesel industry in the United States;[2] those products enhance our supply of transportation energy for heavy-duty trucks, limiting our exposure to global petroleum markets while improving the transportation sector's emissions footprint. As a result, the U.S. biodiesel and renewable diesel market has grown from roughly 100 *million* gallons in 2005 to approximately 4.6 *billion* gallons in 2022.[3] This number will continue to grow as new plants are built and continue to come online.[4]

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[1] NATSO represents nearly 5,000 travel plazas and truck stops nationwide, comprised of both national chains and small, independent locations. SIGMA represents a diverse membership of approximately 260 independent chain retailers and marketers of motor fuel.

[2] Generally, since 2004, Section 40A of the Internal Revenue Code has provided a credit of a fixed dollar amount per gallon of biodiesel and renewable diesel used, sold, or mixed in a trade or business. Initially, that credit was $0.50 per gallon, and was increased to $1.00 per gallon beginning in 2009 (Pub. L. 110–343); the $1.00 amount has not been adjusted for cost of living or inflation since that time. Most recently, those provisions were extended by Public Law 117–169 and are currently effective through December 31, 2024. This $1.00 per gallon blenders' credit for biodiesel and renewable diesel has resulted in lower prices and fewer carbon emissions associated with transportation energy. It has also promoted America's energy security.

[3] EIA Monthly Biofuels Feedstock and Capacity Update, available at *https://www.eia.gov/biofuels/update.*

[4] U.S. Energy Information Administration, "Domestic renewable diesel capacity could more than double through 2025" (February 2, 2023), available at *https://www.eia.gov/todayinenergy/detail.php?id=55399#.ZAYwph4DPZI.*

Biofuel producers today convert used cooking oil, animal fats, vegetable oils, and other "feedstocks" into renewable diesel and biodiesel. Those same feedstocks are also used in the production of sustainable aviation fuel ("SAF").[5] Because there is a limited supply of feedstocks—exacerbated by the ongoing War in Ukraine and global supply chain issues—many producers face trade-offs about which kinds of fuels to produce; these trade-offs are influenced by the tax incentive framework in place and the disparity between over-the-road ($1.00) and through-the-air ($1.75) maximum credit rates.

The Committee has often highlighted the importance of instituting a technology-neutral energy tax policy that ensures clean fuel incentives are tethered to environmental outcomes.[6] The Associations support a technology-neutral approach to energy tax policy. Although much of the energy tax framework authored by the Committee and set to take effect beginning in 2025 is technology-neutral, there remains a disparity between over-the-road renewable fuel incentives and aviation renewable fuel incentives. This disparity exists in both the Section 45Z clean fuel production credit as well as the Section 40A over-the-road biodiesel tax credit and the Section 40B SAF credit.

Preferential tax treatment for SAF will result in a disruption of the market for biodiesel and renewable diesel by diverting limited feedstocks from one technology to another preferred one. In turn, diesel prices will increase without creating any new emissions savings. Emissions savings from the trucking sector will simply be transferred to the aviation sector, at a higher cost to taxpayers. American consumers who are already suffering the effects of inflation will pay more for everyday household goods like groceries, electronics, and medication—all predominately transported by truck—if biodiesel and renewable diesel supply is adversely affected by this new market disparity.

Moreover, the 2025 scheduled shift from a blenders' credit to a producer's credit will further increase diesel prices in the United States.[7] That producer's credit will further distort the biodiesel product market by incentivizing domestic biodiesel producers to export product, thereby diminishing U.S. supply and further imperiling domestic energy security while raising costs for truck drivers.[8] In effect, the U.S. taxpayer will be subsidizing biodiesel consumption overseas, while paying higher costs for fuel domestically.

The Associations believe it is best for the American consumer and America's industrial position in the world marketplace to have reasonably low and stable energy

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[5] Pub. L. 117–169 also enacted for the first time Section 40B, a distinct credit for the sale or use of SAF. That credit was pegged at a fixed dollar amount of $1.25, plus up to an additional 50 cents per gallon based on the lifecycle greenhouse gas emissions of the fuel in question for a maximum possible $1.75 per gallon credit. These provisions are also scheduled to expire after December 31, 2024.

[6] Chairman Wyden has repeatedly reiterated his support for a technology-neutral tax scheme. Chairman Wyden has described the policy framework in Pub. L. 117–169 as creating "emissions-based, technology-neutral credits to turbocharge investment in . . . clean transportation." *See* "Wyden, Colleagues Introduce Legislation to Overhaul Energy Tax Code, Create Jobs, Combat Climate Crisis" (April 21, 2021), available at *https://www.finance.senate.gov/chairmans-news/-wyden-colleagues-introduce-legislation-to-overhaul-energy-tax-code-create-jobs-combat-climate-crisis; see also* Benjamin Storrow, "Cash, Tech, Speed: How the Senate Bill Boosts Clean Energy," E&E News, July 29, 2022, *https://www.eenews.net/articles/cash-tech-speed-how-the-senate-bill-boosts-clean-energy/* ("This is a fundamental change in terms of clean energy policy. No longer we're picking winners and losers. It's tech neutral," [Senator] Wyden said. "So it's agnostic because you're not going to be able to predict the clean energy possibilities because there may be completely new emission reducers 15 years from now."); *see also* Naomi Jagoda, "Senate Panel Deadlocks on Energy Tax Credits Bill," *The Hill,* May 27, 2021, *https://thehill.com/policy/finance/555770-senate-panel-deadlocks-on-energy-tax-credits-bill/* ("It replaces the old rules with a free-market, technology-neutral system in which reducing carbon emissions becomes the lodestar of America's energy future," [Senator] Wyden said).

[7] Pub. L. 117–169 enacted a separate domestic production incentive for clean fuels, Section 45Z. That provision incorporates a variable base credit amount based on lifecycle greenhouse gas emissions relative to a national emissions rate determined by Treasury, with a maximum credit amount of $1.75 per gallon for aviation fuels and $1.00 for other fuels. This provision is scheduled to go into effect on January 1, 2025, and expire after December 31, 2027, effectively shifting this group of incentives away from consumption (*i.e.,* the use, sale, or mixture of certain fuels) toward the production of those fuels.

[8] The biodiesel blenders credit applies to all biodiesel regardless of its source. While the vast majority of biodiesel product in the United States is domestically sourced, in certain markets, retailers rely on imported biodiesel to stabilize supply. This, in turn, imposes downward pressure on domestic biodiesel prices. Thus, the blenders credit currently in place makes it more attractive for fuel retailers to blend and sell biodiesel, and these savings are passed along to consumers.

prices. Congress has an opportunity to lower the cost of fuel for commercial drivers and ensure market stability by promoting parity between credits for over-the-road and aviation renewable fuels that compete for the same feedstock. We look forward to working with the Committee on a technology-neutral approach to alternative fuel incentives.

Sincerely,

NATSO, Representing America's Travel Plazas and Truck Stops
SIGMA: America's Leading Fuel Marketers

SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION
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May 19, 2023

U.S. Senate
Committee on Finance
Washington, DC 20510

RE: SMACNA Supports the IRA's Energy Efficiency Tax Incentives, Labor Standards, Registered Apprenticeship Preferences and Opposes Their Repeal

Dear Senator Wyden:

The Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) is supported by more than 3,500 construction firms engaged in industrial, commercial, residential, architectural and specialty sheet metal and air conditioning construction throughout the United States. On behalf of our membership, **I submit for the May 18th hearing record, our strongest support for the Inflation Reduction Act (IRA), especially its business and personal tax incentives. Enhanced labor standards and important preference for registered apprenticeship and oppose their repeal.** These highly valued tax incentives were enacted and have been quickly and successfully utilized, where regulatory guidance exist, with immediate market results following only months of availability.

The majority of the long-advocated and largely bipartisan incentives to stimulate energy retrofits, efficient construction with higher labor standards and registered apprenticeship preferences are working now. IRA incentives have already generated many times more than the tax deductions and credits in leveraged private investment, creating jobs and economic growth at the state, city and even neighborhood levels, often in neglected areas outside urban centers. Some estimates range as high as $500 billion to as much as $1 trillion dollars in additional private—public investment with leveraged public building work *is already under negotiation or with signed agreements.* Once the IRA's efficiency rebates are available the rate of IRA efficiency adoption in the residential sector will grow exponentially.

While we understand the alarm many Members of Congress felt at the increased deficit left behind following the last administration, where the debt ceiling was raised numerous times, without controversy. Nevertheless, any proposal to retroactively repeal the IRA incentives would be particularly ill-timed considering the recently reported sharp decline in tax receipts. This tax collection decline seems to confirm a growing list of negative economic forecasts most economists and most every independent policy maker agrees upon. **To advocate a repeal and reversal of a substantial section of the tax code as part of a hastily assembled debt ceiling posture would promote the exact form of business, tax, and economic uncertainty the House majority and reasonable tax policy specialists have long cautioned against.**

The suggested IRA repeal package would:

- Cut the bipartisan zero-emission nuclear production credits,
- Gut highly valued IRS Section 179d's commercial, public and industrial deductions,
- Deeply cut the residential efficiency credits,
- Repeal the advanced manufacturing production credits,
- Cut deeply into retrofit and construction grants, and
- Repeal special tax-exempt bonds and other financing for construction projects.

These are only a few incentives amongst many now being utilized to stimulate private sector investments of importance in every states and in every Congressional District across the nation.

In addition, the quickly responding business community and related manufacturers, real estate developers, construction, engineering, energy efficiency and construction industries and their trade associations have already taken quick action by:

- Boosting manufacturing capacity and production of high efficiency equipment to cut corporate waste.
- Expanding construction and related workforces to meet the new project opportunities.
- Investing in a record number of marketing, media, training and building owner retrofit programs.
- Expanding registered apprenticeship programs creating career opportunities for non-college bound.
- Hiring and/or offering new employment opportunities based upon tax code incentive-inspired projects.

Without question, any misguided and abrupt tax policy shift of this magnitude in federal tax policy calls into question the certainty of a countless list of other business and personal tax provisions long seen as a constant for investors, property owners, and regular taxpayers. No such effort was made following the 2017 tax cuts. It also creates uncertainty for any short- and long-term investor as they review investments of high value to state and local economies, as well as the national economy.

While each of the technology neutral IRA tax incentives are of high value, **also included in the tax and related provisions are provisions to reverse long-standing funding deficiencies in state and local efforts reforming outdated building codes and construction standards, a bipartisan priority for decades.** The IRA repeal proposal would also kill badly needed reforms to improve the nation's construction labor standards where federal grants or tax revenues are involved.

The IRA wisely increases the incentives to boost badly needed applicants for registered apprenticeship and prevailing wage payment enforcement standards, both long recipients of bipartisan support in Congress and from Presidents of both parties. This emphasis on registered apprenticeship and prevailing wages in the construction sector, *directly addresses the nation's skilled labor crisis.* This long advocated and common-sense registered apprenticeship initiative is already beginning to expand apprenticeship programs and in time, if supported with resources, will reverse the national skilled labor shortage. This new statute enhancing preferences for registered apprenticeship is even more essential now following decades of insufficient apprenticeship investment by most construction and related firms. The current skilled labor crisis is the direct result of contractor as well as public and private entities neglecting their responsibility to invest in skilled apprenticeship training. The IRA wage and apprenticeship preferences has quickly begun to address that crisis.

In the addition to having a shortage of skilled labor when the decade began, the industry now must staff up a far larger skilled workforce following the enactment of the historic, bipartisan infrastructure Act, ongoing military mega-projects, as well as the CHIPS and Science Act. These projects and thousands of newly announced, complex projects, hundreds of thousands of highly skilled registered apprentices will be needed in the coming decade. History has clearly illustrated, and the IRA has recognized, how best to produce the nation's skilled workforce. Experience also indicates where highly skilled craftspeople will come from in the future—from the Department of Labor's registered apprenticeship program. This program is seen worldwide as the unquestioned "gold standard" for skilled training. Congress was correct and on a solid policy footing to enhance the registered apprenticeship training system by inserting labor standard quality assurances based upon preferences for both responsible contractors and registered apprentices.

SMACNA's membership includes thousands of firms specializing in public work projects involving energy saving performance contracting, facility energy management and residential, commercial, public, and industrial energy system service, construction, and efficient retrofits. Based upon our extensive public market contracting experience, including military and security complex projects **we applaud your vocal support of the IRA's energy efficiency and labor standards related tax incentives and ask that you oppose any counterproductive, and retro-**

active IRA repeal efforts, including those found in the House's debt limit negotiating proposal.

Sincerely,

Stanley E. Kolbe, Jr.
Executive Director, Government Affairs

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