



CREATING GOOD JOBS, A CLEAN ENVIRONMENT, AND A FAIR AND THRIVING ECONOMY

## TESTIMONY

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**Before the 117th United States Congress, Senate Committee on Finance**

**Climate Challenges: The Tax Code's Role in Creating American Jobs,  
Achieving Energy Independence, and Providing Consumers with Affordable,  
Clean Energy**

**Tuesday, April 27th, 2021, 10:00 AM**

Thank you, Chairman Wyden, Ranking Member Crapo, and distinguished members of the Committee. My name is Jason Walsh. I am the Executive Director of BlueGreen Alliance, a national partnership of labor unions and environmental organizations. On behalf of my organization, our partners, and the millions of members and supporters they represent, I want to thank you for convening this important hearing to discuss the role of the federal tax code in transitioning to a clean energy economy and ensuring the creation of quality, family-sustaining jobs across the economy.

The BlueGreen Alliance unites America's largest and most influential 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. Our partnership is firm in its belief that Americans don't have to choose between a good job and a clean environment – we can and must have both. I believe we are in a unique moment to address the climate crisis, create good jobs, and inject equity into our society as we work to rebuild our economy and recover from the Covid-19 pandemic.

This committee and the U.S. tax code can play a critical role in achieving these goals. Federal tax policies can be enacted to ensure we are deploying the technology needed to meet our climate goals, while ensuring jobs created in the clean energy sector are high-quality union jobs and that investments made drive growth in U.S. manufacturing. We can also work to ensure equity in the transition to a clean economy by maximizing the benefits of job growth in the clean energy sector for low-income workers and workers of color, as well as for communities disproportionately impacted by pollution, deindustrialization, and energy transition.

### ***Good Jobs in the Clean Economy***

We are in the midst of a massive energy transition. The world's leading scientific organizations have been unambiguous that climate change is a dire and urgent threat and that the longer we delay, the stronger the action required. Over the last decade, we have witnessed the worsening impacts climate change is having 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 America on a pathway of reducing its emissions to net zero emissions by 2050, and to ensure we are solidly on that path by 2030.

As the nation works to drive down emissions to address the climate crisis and fights to stay competitive in the global race to develop the clean technology of the future, we can see examples of how clean energy investments can spur economic recovery, the growth of a clean economy, and high-quality job creation across the country. For example, a heavily unionized crew of tradespeople built the Block Island offshore wind project off the coast of Rhode Island, union auto workers on factory floors across the country are building cleaner cars and trucks, and workers in St. Louis and Los Angeles are gaining access to high-skilled jobs in energy efficiency retrofitting, pipefitting, and transit manufacturing. These are good, union jobs building and maintaining a clean energy and climate-resilient economy, today.

At the same time, not enough of the new jobs that have been created or promised in the clean energy economy are high-quality, family-sustaining jobs. Before the COVID-19 pandemic, more than 3.3 million Americans were working in the clean energy economy.<sup>i</sup> On average, clean energy workers make more than the typical worker in America. A recent report found that clean energy jobs – defined by that report as jobs in renewable energy, energy efficiency, grid modernization and storage, clean fuels, and clean vehicles – pay 25% more than the national median wage<sup>ii</sup> at an average of \$23.89 an hour for clean energy jobs compared with the 2019 national median of \$19.24.

However, it is also the case that workers in clean energy sectors earn less on average than workers in fossil fuel energy sectors. The primary reason for this wage gap is the gap in union density between renewable energy jobs and jobs in the traditional energy sector. For example, jobs in wind and solar industries average 4% to 6% union density, compared to 10% to 12% union density in natural gas, nuclear, and coal power plants. Likewise, we see that clean energy-specific occupations are in general lower paid than traditional energy-specific occupations. While highly unionized fossil fuel utilities workers earn over \$82,000 a year, solar PV installers with a 4% unionization rate make a median annual wage of less than \$45,000, though that wage does increase slightly if those workers have an electrician’s license.

Wind and solar generation currently employ significantly more workers than most traditional energy generation sectors. Solar energy, which is the energy sub-sector with the lowest union density, employs 345,393 workers. By comparison, the nuclear generation sector employs 60,916 workers and has a much higher union density at 12%. Likewise, the wind generation sector employs 114,774 workers with union density of just 6%, while coal generation employs 79,711 with a unionization rate of 10%. The two lowest paying occupations in the clean energy sector – solar PV installers and wind turbine technicians – are also the two with the highest projected growth, meaning that the sectors within the energy industry that are expected to grow the fastest are not currently producing good-paying jobs relative to other jobs in the energy sector.

Unionization is a key pathway to quality jobs and family sustaining wages. Union jobs on the whole pay better, have better benefits, and are safer than non-union jobs.<sup>iii</sup> 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 lower-paid workers. For example, on average, union members earn a premium of 15% higher wages than non-union workers in the utilities sector, and 45% higher wages in the construction sector.

As we work to meet our climate goals, we need to make a massive investment in energy efficiency and the deployment of clean and renewable technology nationwide, including low-and-no carbon electricity production; carbon capture, removal, storage, and utilization; natural ecosystem restoration; and zero carbon transportation options. At the same time, we must ensure that these investments translate into good jobs and that in doing so we eliminate the disparities between job quality of renewable and traditional energy sectors.

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.

Historically – and persistently – Black Americans fare worse in the economy, having lower wages, less savings to fall back on, and significantly higher poverty rates as systemic racism has stacked the deck against people of color. Regardless of education level, Black workers are far more likely to be unemployed than white workers. Historically, unemployment rates are twice as high for Black workers. That disparity carries into the workplace as well, with Black workers paid on average 73 cents to the dollar compared to white workers.<sup>iv</sup> The wage gap persists regardless of education, and even with advanced degrees Black workers make far less than white workers at the same level. The poverty rate for white Americans sits at about 8.1%. For Black households, it is 20.7%.<sup>v</sup>

One of the tools at our disposal in the fight for equity is unionization. Research has shown that through the collective bargaining power of unions,<sup>vi</sup> 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, like enforcement of safety and health regulations, and overtime. And research has shown that across the board, union members earn higher wages than non-union workers,<sup>vii</sup> and the difference is most pronounced for workers of color and women. White union members earn on average 17% more than their non-union counterparts. Female union members earn 28%, Black union members earn 28% more and Latino union members earn 40% more in wages than non-union Latino workers.

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. Community Workforce Agreements (CWAs) and Community Benefit Agreements (CBAs) are another key opportunity. Similar to a project labor agreement, these are collective bargaining agreements that are negotiated with both union and community partners. These types of agreements often include local hire provisions, targeted hire of low-income or disadvantaged workers, and the creation of pre-apprenticeship pathways for careers on the project. Beyond the obvious benefits to workers of these higher wage, benefit, and career path opportunities, it's also relevant to this Committee the fiscal benefits of decreased reliance on federal programs such as Medicaid, EITC, SNAP, and the like, that come with a well-paying union job with strong, stable benefits.

## ***Manufacturing Supply Chain***

Although the environmental benefits to Americans of a wind or solar farm or a car lot full of electric vehicles (EVs) may be obvious, to truly bring home the benefits of the clean energy transition, policymakers must make sure that the manufacturing facilities producing these products, as well as the machines that make the parts and materials that go into them, are also here at home. Manufacturing has a long history of supplying good-paying jobs to workers across this country and has been the backbone of the American Middle-Class. Manufacturing currently employs about one in 11 American workers, in addition to contributing \$2 trillion a year<sup>viii</sup> to the gross domestic product (GDP). However, the nation has lost nearly 5 million manufacturing jobs since 1997.<sup>ix</sup> If the nation fails to make the investments needed and put in place smart policies, American manufacturing will continue to weaken. Countries around the world are rushing to capture the manufacturing and jobs benefits of the global shift to clean energy and the United States could lead the pack with the right policies in place.

Unfortunately, decades of bad policy, offshoring, and outsourcing have weakened supply chains and lost jobs, and the United States has not been taking full advantage of the opportunity to support and strengthen domestic manufacturing along that supply chain. Today, far too many of the solar panels,<sup>x</sup> solar components, EV components,<sup>xi</sup> and parts and materials for wind turbines<sup>xii</sup> that build the clean economy are manufactured overseas and shipped to the United States. Steps should be taken now to rebuild those vital supply chains and grow jobs here in the United States.

### ***Solar***

The story of the U.S. solar industry is illustrative of the consequences of the failure to act proactively in the early days of a budding industry and the need for a comprehensive, coordinated industrial policy that marries strong trade and manufacturing rules.

In the early days of solar energy, the U.S. was the leader of solar energy research, development, and manufacturing. However, due to China's aggressive moves through trade policy, subsidy, and massive domestic investment in PV manufacturing around 2008-2013, U.S manufacturing of solar components was largely pushed to the sidelines. Because of inconsistent international trade policy and incoherent federal clean technology manufacturing strategy, the nation has struggled to build a competitive solar manufacturing industry. The few solar manufacturers we have left rely on international supply chains.

For example, for American polysilicon manufacturers, this means they are entirely captive to Chinese wafer manufacture, which dominates the global market, as their only customers. When China strategically decided to shut down the use of non-Chinese polysilicon in their wafer manufacturing, the U.S. suppliers were essentially frozen out of the supply chain. And it's no better at the other end of the supply chain, where U.S. module manufacturers have no control over the materials sourcing, labor, or environmental practices behind the key components in their modules, because they have no choice but to source them from China. Recent reporting on the substantially lower environmental, human rights, and labor standards, in China, show how

ultimately unsustainable this arrangement is, for example, in the ongoing accusations of forced labor.<sup>xiii</sup>

Over the years to come, with the dramatic fall in prices for solar and continuing improvements in the manufacture of solar components, the United States has an opportunity to expand PV manufacturing capacity in a way that provides quality, high-road jobs. With strong deployment measures, crafted hand in hand with deliberate manufacturing policies – including manufacturing investment, measures to fill critical supply chain gaps, and a fairer trade policy – the United States can create high-quality jobs and improve our economic security at the same time. Our policies must also support high labor and environmental standards throughout the clean energy supply chain.

### *Wind*

Primarily due to the extraordinary size of the components and the attendant logistical issues of international shipping, the story is brighter when looking at the onshore wind industry, though there is still room for improvement. There are currently more than 500 U.S. manufacturing facilities specializing in wind components.<sup>xiv</sup> Currently more than 90% of nacelles<sup>xv</sup>—the housing for the generator, gearbox, and other mechanics—for U.S. onshore wind turbines are assembled in the United States, along with 40%-70% of blades and hubs and 65%-85% of wind towers.<sup>xvi</sup> However, the materials that can readily be shipped, such as internal nacelle components, like electronics, have very little domestic content. And very few of these facilities are union-represented. We must ensure we expand our domestic supply chain for wind and increase job quality.

The opportunities and risks are even more acute with respect to the budding offshore wind industry. The potential for responsible offshore wind development in the United States is substantial. According to the U.S. Department of Energy, if the nation utilized even 1% of its technical potential offshore wind capacity, it could power nearly 6.5 million homes.<sup>xvii</sup> The industry is rapidly expanding both domestically and internationally.

Currently, the United States has just one offshore wind project operating—the Block Island Offshore Wind Farm off the coast of Rhode Island.<sup>xviii</sup> This project was the result of years of collaboration between labor unions, environmental organizations, industry, and key government officials and entities. The project demonstrates the diverse, highly skilled workforce that will be necessary for all future offshore projects the United States is now projected to create 18.6 gigawatts (GW) of clean and cost-effective offshore wind power in seven Atlantic states within the next decade<sup>xix</sup>. This has the potential of 133,000 and 212,000 jobs per year in seven Atlantic states.<sup>xx</sup> The Atlantic coast states could create \$200 billion in new economic opportunities, as well as over 43,000 high-paying, permanent jobs, simply by developing 54 GW of their 1,283 GW offshore wind energy potential.<sup>xxi</sup>

However, with very little domestic infrastructure to support offshore wind, the risk of components coming from overseas along with the installation vessels is high. For example, with the exception of the foundation, all of the major parts and components of the Block Island Wind Farm were manufactured outside of the United States. The nacelles for the project came from

France, the towers from Spain, and the blades from Denmark.<sup>xxii</sup> As the industry grows, sourcing components domestically represents a significant opportunity to help revitalize American manufacturing. SIEW's recent white paper predicts an almost \$70 billion buildout of U.S. offshore wind supply chain by calculating growth in a number of sectors, which include wind turbines and towers; turbine and substation foundations; upland, export, and array cables; onshore and offshore substations; and marine support, insurance, and project management. However, currently there is no domestic supply chain for these items, meaning that we risk significant portions of the investment to build offshore wind projects flowing out of the economy to purchase technology manufactured abroad, rather than supporting the growth of manufacturing and jobs domestically.

Strong, long-term policy that drives rapid and responsible deployment and provides investment certainty in offshore wind is necessary, coupled with policies to ensure utilization of domestically manufactured materials, invest directly in U.S. manufacturing facilities, and in related infrastructure like transmission.

#### *Electric vehicles*

Happening alongside the nation's transition to cleaner, cheaper forms of energy is an ongoing shift to cleaner vehicles, including EVs. The auto sector is at the heart of U.S. manufacturing, and ensuring the United States leads in EV deployment and manufacturing will be critical to sustaining good jobs in auto and auto components manufacturing. The global transition to EVs is already underway, with our competitors moving quickly to capture the manufacturing and jobs gains in this transition. Today China holds 70% share of global EV battery production capacity, with US and Europe lagging with 16% and 10% respectively. Looking out ten years, current business-as-usual market projection puts the US even further behind – now lagging Europe with only 12% of global battery capacity. The security of American jobs in an EV-dominated automotive market depends on swift policy action to leverage our world class manufacturing base and enable it to move rapidly to build electric vehicles, cells, batteries, and electric drivetrain components, at scale, in the U.S. In short, the United States is at a crossroads with EV development. Either we enact policy that secures and potentially grows manufacturing jobs or we step away from technological leadership and cede the next generation of manufacturing jobs to our competitors

As is true across the clean energy sector, the quality of EV jobs varies a great deal throughout the industry.<sup>xxiii</sup> Looking across the supply chain, some manufacturers in the auto sector offer wages just over minimum wage with no benefits and hazardous working conditions. Others pay workers in the \$20-30 per hour range with full benefits and rigorous safety processes and oversight. Jobs in the automotive sector can either provide a ladder of training and rewarding career paths or they can be temporary and dead-end jobs.

As we make investments to grow deployment of energy efficiency and clean and renewable energy, we must ensure that those investments simultaneously spur growth of domestic supply chains and American manufacturing.

And we must also ensure that throughout the manufacturing sector steps are taken to require or incentivize high road labor standards and responsible labor practices, and to strengthen workers' rights by protecting the right of workers to unionize, fighting back against offshoring and outsourcing with strong domestic procurement and trade policies, and discouraging worker misclassification, which allows employers to deny benefits to workers by claiming they are temporary or part-time employees while they are working full time.

## Recommendations

I believe we can update and improve our tax policy to reshape our clean energy economy and ensure that family sustaining jobs come with it. We can also enhance tax credits to strengthen American manufacturing and domestic supply chains.

In particular, I urge this committee to:

- 1. Extend and Strengthen Clean Energy Tax Credits:** Key clean energy tax credits should be extended and strengthened, including those for onshore and offshore wind, solar, clean transportation, EV charging infrastructure, grid modernization, and energy efficiency. Congress should also make these tax credits temporarily refundable - many of the newer companies in this space don't have taxable income to fully take advantage of these credits and lower income consumers may be unable to gain the benefits of these credits if they aren't refundable. Congress should couple these tax credits with labor standards and procurement policies that ensure the use of domestic, clean, and safe materials made by law-abiding corporations throughout the supply chain and support employers that adopt high road labor practices, including organizing neutrality, prevailing wages, registered apprenticeship, protection against worker misclassification, excessive use of temporary labor, safety and health protections, project labor agreements, community benefit agreements, local hire, and other provisions and practices that prioritize improving training, working conditions, and project benefits. As I mentioned earlier, not only are these important worker protections, but they substantially lower costs to the federal government of enforcement actions as well as lessening the expenditures from low-income support programs, such as EITC, Medicaid, and SNAP.

We are eager to engage with this committee and congressional offices around consideration of a technology-neutral approach to future energy tax credits, such as the approach outlined in Chairman Wyden's Clean Energy for America Act. We appreciate that this approach rewards carbon abatement, spurring deployment and innovation of low- and no-carbon technologies and rewarding existing zero-emission generation. Nuclear power is the single largest source of zero emission electricity in the United States. A recent report by the Union of Concerned Scientists found that nearly 35 percent of the country's nuclear power plants, representing 22 percent of US nuclear capacity, are at risk of early closure or slated to retire and that retiring plants early could result in a cumulative 4 to 6 percent increase in U.S. power sector carbon emissions by 2035. The study also found that to avoid the worst consequences of climate change we need carbon-reduction policies that better reflect the value of zero emission electricity, coupled with policies to ensure safety and waste remediation.

We are also encouraged to see inclusion in this bill of prevailing wage and registered apprenticeship language to better ensure that clean energy construction jobs are safe and family-sustaining and provide competitive benefits. We look forward to working with Chairman Wyden and this committee to expand on these provisions, including addressing domestic content.

2. **Support Manufacturing and Clean Energy Supply Chains:** Policies that increase the demand for clean technology must go hand in hand with incentives to support and grow American manufacturing and domestic supply chains. Already, as the nation increases deployment of clean technology, our ability to manufacture those products and the parts and materials that go into them is falling further behind as demand increases.<sup>xxiv</sup> That is why targeted investments and smart policies are needed to ensure that the nation is able to capture the benefits of the clean energy economy.

In 2020, the BlueGreen Alliance released a comprehensive manufacturing agenda<sup>xxv</sup> proposing a set of national actions to achieve global leadership across clean technology manufacturing; cut emissions from the production of essential materials; upgrade and modernize the entirety of the U.S. industrial base; and undertake a new generation of industrial development that rebuilds good American jobs and is clean, safe, and fair for workers and communities alike.

There are two key policies this committee should consider. First, it should **renew and robustly fund the Advanced Energy Projects Credit (48C):** The Advanced Energy Projects Credit is a 30 percent investment tax credit created to reequip, expand, or establish domestic clean energy, transportation, and grid technology manufacturing facilities. The program should be funded at least \$10 billion, or made permanent and, given the current economic climate, the program should be made refundable. The scope of the program should be expanded to capture the manufacture of key energy and carbon reducing technologies, such as battery cells. Furthermore, both the manufacture of and deployment of industrial emissions reduction technologies and processes should be eligible for support under this or other existing relevant tax credits.

We also recommend the committee improve the 48C tax credit along the lines of the American Jobs in Energy Manufacturing Act, sponsored by Senators Stabenow and Manchin, which would ensure projects pay prevailing wage and would be targeted in a way to support clean technology manufacturing in communities that have lost jobs in manufacturing, mining, or power generation and other disadvantaged and impacted communities and should prioritize those firms hiring displaced workers. Legislation like this can help jumpstart our economic recovery, ensure we are building America's energy future here at home, reduce industrial emissions, and deliver good union jobs for workers and the communities that need it the most, including those impacted by changes in our nation's energy systems.

Second, it should **create an incentive, similar to the 45M technology production tax credit (PTC)** to create a durable incentive for domestic production of strategic clean

energy and vehicle component technologies. In addition to the up-front investment incentive of 48C, this structure would give an incentive to expand operations to a globally competitive scale quickly and substantially. For example, to help fill gaps in the solar supply chain, such a manufacturing PTC could provide a per-unit or per-watt credit for domestically produced modules, photovoltaic cells, photovoltaic wafers, and solar grade polysilicon. Coupling a PTC with other manufacturing and deployment incentives could help reverse decades of disinvestment, offshoring, and inconsistent manufacturing policy that has weakened our once competitive edge. Importantly, such an incentive would reward large scale and efficiency, exactly what we need to compete in these rapidly expanding global industries and help ensure our manufacturing remains strong and resilient against future subsidies and potential dumping by our competitors. We need a coordinated approach, including measures such as an adapted 45M technology production tax credit as proposed here, to incentivize strategic technology manufacturing here, harness American ingenuity, and drive down deployment costs while adding family-sustaining jobs across the country.

3. **Support a job-sustaining transition to clean vehicles:** Consumer incentives stand to play a significant role in shaping the shift to electric vehicles and the manufacturing, jobs, and community impacts of that transition. The existing 30D consumer tax credit should be updated to support domestic assembly, domestic content, and high road labor standards. The structure of the credit must help retain and grow the next generation of high-skill, high-wage, family-supporting jobs in the United States and support the growth of high volume, high-quality domestic electric vehicle production and supply chains necessary to remain competitive in this space over the long term. To address equity issues with the existing credit, the credit should be converted to a refundable credit or ideally refunded at the point of sale, and the incentive should be targeted towards more moderate income and working-class households. Additionally, we believe that Congress should establish a tax credit to incentivize the purchase of used EVs, which could improve access to EVs for low- and moderate-income consumers, and Congress should ensure that such a credit is similarly refundable and targeted. Additionally, similar criteria for domestic manufacturing, labor standards, and addressing equity should be applied to the 30B credit for other advanced technology vehicles.

We also support the ongoing work to expand the 30C tax credit for charging infrastructure, as the robust proliferation of easily accessible charging will be essential to the success of EV adoption. Incentives for charging infrastructure should ensure availability for all communities, with a priority on filling gaps in low income, rural, and deindustrialized communities and communities of color, and availability for residents of multi-family housing, and be refundable. These incentives should also require certified training of electric vehicle supply equipment (such as the Electric Vehicle Infrastructure Training Program, or EVITP) and the domestic manufacture of charging stations.

## Potential Impact of Good Jobs and Domestic Manufacturing in Clean Energy

This committee is gathered today to discuss the tax code's role in creating American jobs, achieving energy independence, and providing consumers with affordable, clean energy. I'm

here to argue that we can achieve all of these policy goals while also ensuring that workers are paid fair wages, that we support and grow our domestic manufacturing supply chains, and that communities that have traditionally been left behind in our economy experience the gains in clean air, clean water, and middle-class enabling jobs. This is a classic example of the BlueGreen Alliance's mission: we don't have to choose between achieving our climate goals by deploying clean, affordable energy and creating quality, family-sustaining jobs across our economy. We can have both at the same time.

Researchers from Princeton University<sup>xxvi</sup> in a recent working paper found increasing wages for workers in the clean energy sector by 20% would only increase the capital costs of solar and wind projects by 2-4% and operations and maintenance costs by approximately 3-6% across technologies, assuming current domestic content shares. Those small technology cost increases may very well be offset by an increase in labor productivity – an increase, by the way, that often comes from better training and the stability that comes from higher wages. For example, a 20% labor cost premium can be offset by an increase in domestic labor productivity of 20%. The research also found the impact of increased domestic manufacturing for clean energy to be similarly minimal, with a 10% increase in domestic sourcing associated with only a 1% increase in project costs for solar PV projects.

When looking at the larger picture of the impact that increasing the wages of clean technology workers and domestic content utilization would have on the total cost of transitioning to a clean energy system, again, the Princeton researchers found that the impact was very minimal, determining that there is only a 3% difference in supply-side investment cost over the entire transition period from 2020 to 2050, and that these costs would have no recognizable impact on deployment of clean energy.

While increasing wages and the amount of domestic content in the solar and wind energy industries will have a very minimal impact on project costs, workers in those industries would see significant benefits, including billions in higher wages and hundreds of thousands of new jobs in the 2020s. The researchers found paying workers 20% more and increasing the use of domestic content would generate an additional \$5 billion in annual wages in the 2020s, which equates to increasing each worker's average annual wages by over \$12-13,000. And by producing more of these components here in the United States, we can support an additional 45,000 jobs in the 2020s. Importantly, this Committee has before it a set of policies that it can undertake to ensure that even these small potential increases are “lost in the noise” of robust incentives to re-shore and expand domestic deployment. The smart incentives we’re talking about today can not only increase the standard of living of millions of Americans, but can increase their quality of life, all while continuing to drive down the costs of the clean energy technologies we need to deploy to secure our children’s future. A win-win-win opportunity that is nearly unprecedented in our history.

## Conclusion

As the United States ramps up efforts to grow the clean economy, we must invest in a range of clean energy sources, energy efficiency, and electric vehicles. At the same time, moving forward without putting the right policies in place to lift up the quality of the jobs created and ensure

workers and communities see the benefits of these investments would put the burdens of economic transition on workers.

Through federal tax policy, we can make strategic investments in clean energy projects in ways that ensure the jobs created are good jobs and that the investments deliver gains for American manufacturing, for workers, and for communities, particularly disadvantaged communities and workers. I urge this committee to advance policies to support clean energy development together with high-road labor standards and policies to reinvigorate our domestic supply chains and American manufacturing, and to prioritize these investments in places hit by energy transition and deindustrialization.

Thank you for the opportunity to speak in front of the committee.

<sup>i</sup> BW Research Partnership, *Clean Jobs, Better Jobs; An examination of Clean Energy Job Wages and Benefits*, 2020. Available online: <https://e2.org/wp-content/uploads/2020/10/Clean-Jobs-Better-Jobs.-October-2020.-E2-ACORE-CELI.pdf>

<sup>ii</sup> BW Research Partnership, *Clean Jobs, Better Jobs; An examination of Clean Energy Job Wages and Benefits*, 2020. Available online: <https://e2.org/wp-content/uploads/2020/10/Clean-Jobs-Better-Jobs.-October-2020.-E2-ACORE-CELI.pdf>

<sup>iii</sup> AFL-CIO, *Building Power for Working People*, 2021. Available online: <https://aflcio.org/what-unions-do/empower-workers#:~:text=Union%20Jobs%20Help%20Achieve%20Work%2DLife%20Balance&text=There%27s%20more%20to%20life%20than,schedules%20and%20no%20mandatory%20overtime>

<sup>iv</sup> Economic Policy Institute, *Black workers face two of the most lethal preexisting conditions for coronavirus-racism and economic inequality*, 2020. Available online: <https://www.epi.org/publication/black-workers-covid/>

<sup>v</sup> Economic Policy Institute, *Black workers face two of the most lethal preexisting conditions for coronavirus-racism and economic inequality*, 2020. Available online: <https://www.epi.org/publication/black-workers-covid/>

<sup>vi</sup> Economic Policy Institute, *Black workers face two of the most lethal preexisting conditions for coronavirus-racism and economic inequality*, 2020. Available online: <https://www.epi.org/publication/black-workers-covid/>

<sup>vii</sup> Bureau of Labor Statistics, New Release, January 22, 2021. Available online:

<https://www.bls.gov/news.release/pdf/union2.pdf>

<sup>viii</sup> Economic Policy Institute, *The Manufacturing Footprint and the Importance of U.S. Manufacturing Jobs*. Available online: <https://www.epi.org/publication/the-manufacturing-footprint-and-the-importance-of-u-s-manufacturing-jobs/>

<sup>ix</sup> Economic Policy Institute, *We can reshore manufacturing jobs, but Trump hasn't done it*, 2020. Available online: <https://www.epi.org/publication/reshoring-manufacturing-jobs#:~:text=Overall%2C%20the%20U.S.%20has%20suffered,Census%20Bureau%202020a%2C%202020b>

<sup>x</sup> U.S. Energy Information Administration, *U.S. shipments of solar photovoltaic modules increase as prices continue to fall*, 2020. Available online: <https://www.eia.gov/todayinenergy/detail.php?id=44816#:~:text=Effective%20February%207%2C%202018%2C%20the,subsequent%20year%20for%20four%20years.&text=In%202019%2C%20imports%20accounted%20for,of%20total%20solar%20PV%20shipments>

<sup>xi</sup> United States Trade Commission, Journal of International Commerce and Economics, *The supply chain for electric vehicle batteries*, 2018. Available online:

[https://www.usitc.gov/publications/332/journals/the\\_supply\\_chain\\_for\\_electric\\_vehicle\\_batteries.pdf](https://www.usitc.gov/publications/332/journals/the_supply_chain_for_electric_vehicle_batteries.pdf)

<sup>xii</sup> IBIS World, *Wind Turbine Manufacturing Industry in the US*, 2021. Available online: <https://www.ibisworld.com/united-states/market-research-reports/wind-turbine-manufacturing-industry/>

<sup>xiii</sup> Council on Foreign Relations, *China's Repression of Uyghurs in Xinjiang*, 2021. Available online: <https://www.cfr.org/backgrounder/chinas-repression-uyghurs-xinjiang>

<sup>xiv</sup> DOE Office of Energy & Renewable Energy, *Wind Manufacturing and Supply Chain*, 2021. Available online: <https://www.energy.gov/eere/wind/wind-manufacturing-and-supply-chain#:~:text=There%20are%20more%20than%20500,to%20multi%2Dmegawatt%20power%20ratings>

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- <sup>xv</sup> Lawrence Berkeley National Laboratory, *Wind Energy Technology Data Update: 2020 Edition*, 2020. Available online: <https://escholarship.org/uc/item/9r49w83n>
- <sup>xvi</sup> Lawrence Berkeley National Laboratory, *Wind Technologies Market Report*, 2020., Available online: <https://emp.lbl.gov/wind-technologies-market-report>
- <sup>xvii</sup> DOE Office of Energy and Renewable Energy, *Computing America's Offshore Wind Energy Potential*, 2016. Available online: <https://www.energy.gov/eere/articles/computing-america-s-offshore-wind-energy-potential>
- <sup>xviii</sup> Orsted, *Offshore Wind Projects in the U.S.*, 2020. Available online: <https://us.orsted.com/wind-projects>
- <sup>xix</sup> Oceana, *Offshore Wind Report*, 2010. Available online: [https://oceana.org/sites/default/files/reports/Offshore\\_Wind\\_Report\\_-\\_Final\\_1.pdf](https://oceana.org/sites/default/files/reports/Offshore_Wind_Report_-_Final_1.pdf)
- <sup>xx</sup> National Renewable Energy Laboratory, *Offshore Wind Power in the United States*, 2010. Available online: <https://www.nrel.gov/docs/fy10osti/49229.pdf>
- <sup>xxi</sup> National Renewable Energy Laboratory, *Offshore Wind Power in the United States*, 2010. Available online: <https://www.nrel.gov/docs/fy10osti/49229.pdf>
- <sup>xxii</sup> General Electric, *My Turbine Lies Over the Ocean: It takes Herculean Labor to Build America's First Offshore Wind Farm*
- <sup>xxiii</sup> BlueGreen Alliance, *electric Vehicles at a Crossroads: Challenges and Opportunities for the Future of U.S. Manufacturing and Jobs*. Available online: <https://www.bluegreenalliance.org/wp-content/uploads/2018/09/Electric-Vehicles-At-a-Crossroads-Report-vFINAL.pdf>
- <sup>xxiv</sup> E&E News, *Biden's 'Buy America' plan may hit a solar wall*, 2021. Available online: <https://www.eenews.net/stories/1063726219>
- <sup>xxv</sup> BlueGreen Alliance, *Manufacturing Agenda: A National Blueprint for Clean Technology Manufacturing Leadership and Industrial Transformation*, 2020. Available online: <https://www.bluegreenalliance.org/resources/manufacturing-agenda-a-national-blueprint-for-clean-technology-manufacturing-leadership-and-industrial-transformation/>
- <sup>xxvi</sup> Princeton University, *Influence of high road labor policies and practices on renewable energy costs, decarbonization pathways and labor outcomes*, 2021. Available online: <https://www.dropbox.com/sh/ad9pzifo9w1a49u/AAC2milGD44MlwXo1Sk7EAgsa?dl=0>