

**Written Testimony of Khalil Shahyd**  
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**Economy.”**  
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Good morning Chair Brown, Ranking Member Toomey, and distinguished members of the Senate Committee on Banking, Housing and Urban Affairs. I want to thank you for holding this hearing on Capitalizing on Opportunities in the Clean Energy Economy and inviting me to testify and provide comments.

My name is Khalil Shahyd. I am a Senior Policy Advisor on Equity, Environment and Just Communities with the Natural Resources Defense Council (NRDC). NRDC is an international nonprofit organization of scientists, lawyers, and environmental specialists dedicated to protecting public health and the environment. Founded in 1970, NRDC has more than 3 million members and activists supporting work to protect public health, the environment and grow more sustainable livelihoods

The United States is confronted today by the extraordinary and inter-connected crises of the global pandemic, economic recession, the persistence of deep racial injustice, a rapidly destabilizing climate, and threats to the democratic foundations of the nation. Few sessions of Congress have ever shouldered a greater responsibility -- or a greater opportunity. Among the many acts of leadership that will be

necessary, making it safely through these crises will require comprehensive and sustained federal investment to recover, rebuild, and lay the foundation for a more just and stable future.

Make no mistake about it: the pandemic has wreaked havoc on the lives of many American families, with more than 8 million people now having fallen below the federal poverty line since May of 2020 and prior to the American Rescue Plan<sup>1</sup>.

Climate change threatens to undo steps taken to alleviate that economic burden and deepen the crisis unless we act swiftly to mitigate the most severe outcomes and build back better with a more health, just, and resilient economy fueled by clean energy. The climate crisis exacerbates the situation as millions of people in the U.S. feel the social, economic, and environmental effects of extreme weather each year. In 2020, there were 22 extreme weather/climate disaster events in the United States, with losses exceeding *\$1 billion each*. Currently, the total cost of U.S. weather and [climate disasters since the 1980s exceeds \\$1.875 trillion](#) . These numbers represent more than just losses to the economy: The increasing risk of disasters threatens to plunge millions into poverty and deepen crises for those already suffering.

Like most of the economy, clean energy was hit hard by the COVID-19 pandemic and economic downturn in 2020. At one point more than 600,000 clean energy workers had filed for unemployment. The decline in total clean energy employment last year was the first recorded since E2 (Environmental Entrepreneurs) began producing its annual Clean Jobs America reports in 2016. If the clean energy sector is to be the engine that drives us toward a more equitable, sustainable economy, we must ensure it recovers and expands to provide the opportunity and livelihoods so many people need. Fortunately, the signs are there. The sector rebounded strongly after May to recover about half of those jobs, but

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<sup>1</sup> <https://www.businessinsider.com/8-million-americans-fallen-into-poverty-as-government-benefits-lapse-2021-1>

finished the year still down 307,000 clean energy workers. More Federal leadership through policy and investments will be needed to ensure a long-term recovery and economic transition to clean energy.

### How the clean energy transition will affect the American economy and our ability to compete globally in the 21st Century

The clean energy transition is already happening, but not fast enough. It's not happening fast enough for regions such as southern Ohio, where due to market forces and the rise of cheap but still polluting natural gas, more coal-fired power plants have closed than in any other state. Plants producing a whopping 16 gigawatts of electricity—enough to power about [11 million homes for a day](#)—have either shut down or announced they'll be retiring soon<sup>2</sup>.

Global energy consumption has been shifting from a mid-20th century system dominated by coal and oil to one that will be dominated by renewable energy by the mid-21st century. President Biden has committed to increase the pace of climate action in order to cut emissions by at least 50 percent below 2005 levels by 2030 – a nearly doubling of the current U.S. climate targets. This level of ambition is the minimum that the moment requires. Cutting U.S. emissions by this much is ambitious, achievable, and necessary. Establishing a target to cut emissions by at least 50 percent below 2005 levels by 2030, and delivering the necessary actions, sets the conditions for the U.S. to help rally the world. This will need to be combined with the mobilization of significant financing to support developing countries in shifting toward a net-zero economy and addressing the impacts of climate change.

However, what matters most to ensuring U.S. leadership to the world in addressing the climate crisis are strong actions at home. The federal government has an important role in facilitating the acceleration of a clean, modern 21st century energy system. Ignoring that role, or diminishing its effectiveness, condemns millions of small communities and families who struggle to pull themselves out of dire

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<sup>2</sup> <https://www.nrdc.org/stories/what-can-green-groups-labor-unions-veterans-and-coal-mining-exec-all-get-behind-solar-power>

economic circumstances to continue suffering if we cling to outdated infrastructure and energy sources. We have a clear path forward.

Consider that clean energy is the fastest growing energy sector in the United States and the energy system as a whole is getting cleaner.

### Expected job growth and economic development accruing from the clean energy transformation

Clean energy jobs eventually bounced back from pandemic-caused losses by nearly 11 percent in the second half of 2020 to employ more than 3 million Americans across every state and nearly every county, according [to the fifth annual Clean Jobs America report](#) from E2<sup>3</sup>. The report, released at the start of U.S. Climate Action Week in Washington, DC., comes as the Biden administration prepares to host the Leaders' Summit on Climate beginning tomorrow and Congress prepares to consider the administration's American Jobs Plan infrastructure and clean energy package.

While it appears the clean jobs sector is coming back, it still has not reached pre-pandemic levels. No one foresaw the COVID-19 pandemic and the continuing economic impact it would have.

Clean energy sectors saw significant declines in 2020, including renewable energy (6 percent), grid and storage (7 percent), and clean fuels (7 percent). Energy efficiency jobs saw the biggest drop, declining about 11 percent over the year as workers were prevented from entering homes and offices because of the pandemic lockdowns. Nonetheless, energy efficiency still accounts for an even greater share of U.S. construction jobs, employing about one in every five construction workers nationwide.

As noted in the October 2020 "[Clean Jobs, Better Jobs](#)" analysis of clean energy jobs wages and benefits by E2, the American Council on Renewable Energy, and the Clean Energy Leadership Institute, the economic shutdown affected ethnic and racial minorities more significantly across the nation. In April

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<sup>3</sup> <https://e2.org/reports/clean-jobs-america-2021/>

2020, at the peak of the economic shutdown, six in 10 Hispanic Americans (61 percent) and four in 10 Black Americans (44 percent) reported that someone in their household had either lost a job or experienced wage losses due to COVID-19; this compares to only 38 percent of white Americans.<sup>4</sup>

Still, several clean energy sectors did see job gains in 2020, including wind energy which added about 2,000 jobs. But the brightest spot was in manufacturing of electric and plug-in hybrid vehicles, where about 12,200 jobs were added as an increasing number of automakers announced shifts to producing 100 percent zero-emission vehicles.

Despite the setbacks, clean energy jobs rebounded quicker than the overall nationwide workforce, according to the analysis. Clean energy jobs have grown by about 11 percent since last May, compared to less than 9 percent growth in the national workforce during the same period.

However, if members of Congress want to ensure that the pace of job growth is fast enough and occurring in the communities and regions that need it most--and in the struggling districts of yours and every state in the nation--we need your leadership in supporting smart policies, including enacting the American Jobs Plan. As Clean Jobs America 2021 shows, these jobs are and can be created in every state. They can't be downsized or exported. They're not blue state jobs or red state jobs. They're American jobs with the potential to employ a member of every household in this nation with good, family-sustaining wages and benefits.

According to an analysis of Bureau of Labor Statistics data (BLS), the median hourly wage for clean energy jobs was \$23.89 in 2019. That was 25 percent higher than the nationwide median hourly wage of \$19.14 and also higher than most fossil fuel extraction jobs.

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<sup>4</sup> <https://e2.org/wp-content/uploads/2020/10/Clean-Jobs-Better-Jobs.-October-2020.-E2-ACORE-CELLI.pdf>

For instance, wind turbine technicians in 2020 earned about \$56,230 and solar installers made about \$46,470, according to BLS data. Oil and gas deck or galley hands made about \$39,420 while oil and gas derrick operators took home about \$47,920.

Within the clean energy sector, looking at median hourly wages, wind energy workers earn the highest wages at \$25.95 per hour, compared with \$25.40 for grid modernization, \$24.82 for storage, \$24.48 for solar, and \$24.44 for energy efficiency.

To ensure that these jobs are available to workers who most need them, we need policies to support them and overcome hurdles, whether they are the result of the pandemic or the irrational antagonism of the previous administration—or both. The Biden administration's plans to increase energy efficiency and weatherization programs, its plans to boost renewable energy, and its proposed investments in modernizing the nation's power grid and transportation system with more electric vehicles and charging stations will also provide a much-needed shot in the arm for clean energy companies post-COVID 19. At the same time, President Biden's strategy to invest \$100 billion in workforce training will help create new career paths to clean energy for millions of Americans. Whether all of that translates into jobs, however, remains dependent on what Congress does. Failure to act means prolonging the COVID recession, keeping us locked into a dying fossil fuel economy, and increasing the threat of extreme weather disruptions to lives, labor, and our infrastructure due to climate change.

On the other hand, the benefits of action are many.

[Potential benefits of economy-wide electrification and decarbonization efforts, in the transportation and housing sectors.](#)

Most people in the U.S.—particularly renters—spend more than half of their income on transportation, rent, and home energy costs. Investment in cleaner transportation options, water and waste sewer systems, energy efficiency, and a clean energy future—combined with commitments to addressing racial

inequities-- can lead our actions against climate change while creating a stronger, more resilient economy set for future growth.

## Transit

Public transit is one of the key solutions to addressing the climate crisis and in creating more opportunity while improving the daily quality of life for millions of people. Transit is critical to the millions of Americans who use it and contrary to the way it is often presented, it is even critical to those who do **not** use it. For regular transit riders, it is a lifeline providing mobility options, generates jobs, spurs economic growth. For the wider public, policies supporting the improvement and expansion of transit have many societal benefits, such as improving air quality, reducing overall energy use, and avoiding carbon pollution. It also decreases traffic congestion for drivers by taking millions of cars off the road thus shortening average commute times.

Investment in public transit has benefits beyond those counted by the rides. Federal spending on public transportation is a win for working families because it creates immediate jobs and income by supporting manufacturing and construction, in addition to public transportation operation activities.

According to the Census Bureau, 13% of U.S. households have incomes less than \$15,000, but among transit-using households, the ratio rises to 21%<sup>5</sup>. Targeting federal investments in public transit can ensure that spending, which helps address climate change, also improves the lives of the poorest households.

But public transit alone won't take us where we need to go on climate change. Try as we might, we won't convince the majority of Americans to leave the comforts and personal freedom of their private

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<sup>5</sup> <https://www.apta.com/wp-content/uploads/Resources/resources/reportsandpublications/Documents/APTA-Who-Rides-Public-Transportation-2017.pdf>

vehicles for mass transit. Commuting needs, family responsibilities, or lifestyle choices means we have to find ways to decarbonize private vehicle miles traveled with the rapid deployment of electric vehicles.

Meeting this challenge, President Biden's American Jobs Plan includes investments in electric vehicle infrastructure delivering 500,000 charging stations by 2030, and incentives to buy American-made electric vehicles. The latter also include a rebate for lower-income buyers of zero-emitting electric vehicles, a policy to make access to the electric vehicles market for electric more equitable.

A national Clean Cars Program can deliver many benefits to communities across America. Drivers will save on fuel costs even when accounting for the incrementally higher upfront cost of electric vehicle technologies.

A national clean cars program would benefit public health by reducing thousands of tons of smog-forming pollutants annually, as well as fine particulate matter and other toxic air contaminants. A study of the Illinois Clean Cars Program commissioned by NRDC also found that lower-income families as well as rural families will benefit. The study finds that the operating cost savings provide greater benefit to low-income households because they tend to spend a larger proportion of their income on transportation fuel than do higher-income consumers. Similarly, rural drivers tend to have higher operating costs due to the longer distances traveled. The Studies also show that 85% of people who buy new vehicles finance them, and most will see fuel cost savings from Day One.

Smart investments in transportation, including public transit and vehicle electrification, can have many tangible benefits to quality of life, health and job creation.

## Housing

Housing represents a key element of the Biden climate strategy, which calls for cutting the carbon footprint of the U.S. building stock in half by 2035 by creating incentives for deep retrofits that combine appliance electrification, efficiency, and on-site clean power generation. The climate crisis and the



increasing cost of housing are absolutely linked -- creating extreme burdens for households and families across this country. These include renters, female heads of households, and the elderly--and disproportionately challenge the financial stability of African-Americans and other communities of color.

Often, low-income and vulnerable households have very few housing options. They are left to rely on low-quality housing due to residential segregation, long-term neighborhood disinvestment, and deferred maintenance of the housing stock. These homes tend to waste energy so that low-income families pay more per square foot than higher income residents. The result is that nearly one-third of households in the United States struggle to pay energy bills and in fact, about one in five households has been forced to choose between buying food, medicine or other necessities – or paying an energy bill.<sup>6</sup>

As if rising cost of housing were not enough, poor and low-income Americans are increasingly reliant on older housing units, leaving them more vulnerable to major weather disasters such as hurricanes; flooding, wildfires, and other climate-related emergencies. These weather extremes place vulnerable housing stock at risk of destruction, leading to the displacement and destabilization of families and communities and increasing the likelihood that they will experience--or be trapped in--poverty.

To avert the worst impacts of climate change, our policies must ensure both the reduction of emissions that cause climate change -- and that people can live in safe, affordable housing. With decisive leadership, Congress can help address the dual crisis of affordable housing by fully funding federal programs such as the Housing Trust Fund and Community Development Block Grant and climate change through smart investments in energy efficiency, electrification and clean energy generation while helping to produce hundreds of thousands of new clean jobs -- and alleviate the negative health impacts of indoor and outdoor air pollution.

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<sup>6</sup> <https://www.eia.gov/todayinenergy/detail.php?id=37072>

NRDC's report, *America's Clean Energy Frontier: The Pathway to a Safer Climate Future*, shows that the we can reduce carbon emissions by at least 80 percent by 2050, with fully half coming from energy efficiency. This means that smarter energy use is absolutely critical to achieving U.S. emissions reduction goals -- and doing so in an affordable manner.

Consider that residential energy efficiency is the largest single measure that can reduce climate pollution in the United States. Along with cutting that pollution and shrinking energy bills, efficiency has considerable health and safety benefits – including improved indoor air quality, which reduces the likelihood of asthma cases.

The primary source of federal investment in residential energy retrofits comes through the Department of Energy's Weatherization Assistance Program. Every year, the program's efficiency improvements alone cut America's climate pollution by 2 million metric tons.<sup>7</sup> In total, residential efficiency improvements can account for carbon reductions as high as 550 million metric tons every year by 2050.

Unfortunately, there are many barriers to increasing energy efficiency in the nation's affordable housing. But Congress can help.

Despite the considerable need for efficiency improvements in low-income housing, many programs that facilitate retrofits are sorely underfunded. Across the country, only about 35,000 homes can enroll in WAP on a yearly basis. That's not enough. There's not a state in the country where the waiting list for services is not extremely long (sometimes years). For example, at the current rate, it would take Ohio almost 150 years to weatherize all the currently eligible homes.<sup>8</sup> Meanwhile, WAP's maximum per unit expenditure is only about \$7,500 for weatherization and \$2,000 for solar installation. Raising the per-unit spending cap will allow deeper home retrofits, producing more savings for families and the

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<sup>7</sup> <https://energy.gov/eere/articles/celebrating-40-years-america-s-weatherization-assistance-program>

<sup>8</sup> Dave Rinebolt, Executive Director and Counsel at Ohio Partners for Affordable Energy; "comments during a panel discussion on the Multiple Benefits of Federal Energy programs"

environment. It also will allow WAP contractors to increase the wages for workers on these projects. Reducing labor turnover slows down and makes quality standards difficult while providing stable career pathways to thousands of potential workers. Today the under-resourced WAP program employs roughly 8,500 Americans across the nation. With proper funding, it could employ far more while providing numerous health, economic, and environmental benefits to communities across the nation.

Despite the value the WAP program offers, multifamily housing units--which are often relied upon by the poorest families—are severely underserved in most regions of the country. The cost of regular maintenance and upgrades for multifamily housing are among the most significant barriers to preserving affordable, quality homes for low-income households. Without attention, the properties deteriorate. Federal action is needed to incentivize investments in hard-to-reach sectors of the housing market, with specific attention to the multifamily market which has tremendous potential for skilled employment, and energy and cost savings nationwide. Without it, there will be greater inequity and greater costs to families who are least able to afford them.

We have a housing affordability crisis in America. Millions of affordable rental homes have already been demolished because housing providers could not afford the cost of maintaining those buildings. Much of the remaining affordable rental homes are aging and in need of repair. The escalating climate crisis will only worsen the situation.

Energy efficiency can help bridge the growing gap between renter incomes and rising housing costs.

[Recommendations for public and private solutions to foster and equitably distribute the opportunities inherent in these changes](#)

Clean energy has a diversity problem. Despite its broad range of businesses-- from construction to utilities, manufacturing, professional services, and repair and maintenance-- the clean energy sector is dominated by white men.

About 75 percent of clean energy workers across America are white. Black and Hispanic/Latino workers are more underrepresented in clean energy than they are across the rest of the economy, with Blacks representing 8 percent of the clean energy workforce and Hispanic/Latinos representing 16 percent. Further, women only represent about 26 percent of all clean energy jobs, even though they account for about half of the U.S. population.

Given job growth in the clean energy sector over the past decade, this lack of diversity has resulted in many women and people of color missing out on one of America's great economic expansions.

As the United States looks to build back a better, cleaner, more equitable economy, a renewed focus on increasing diversity in the clean energy sector is an economic imperative. Both the transition to a low-carbon energy system as well as proposed state and federal stimulus to boost the economy have the potential to create millions of new jobs across the United States. Policies that support the energy sector and its low-carbon transition must center the inclusion of women and ethnic and racial minorities, particularly Black workers, so that the economic benefits are more equitable.

In 2018, [the Boston Consulting Group found](#) that across the broader economy “companies that reported above-average diversity on their management teams also reported innovation revenue that was 19 percentage points higher than that of companies with below-average leadership diversity.”<sup>9</sup>

In a sector like clean energy that relies heavily on innovation, there is ample room for improvement in diversifying management teams. According to a [2019 report from the Solar Energy Industries Association and The Solar Foundation](#), of all senior executives in the solar industry, just 2 percent are Black and only one in five are women.<sup>10</sup>

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<sup>9</sup> <https://www.bcg.com/en-us/publications/2018/how-diverse-leadership-teams-boost-innovation>

<sup>10</sup> <https://www.thesolarfoundation.org/wp-content/uploads/2019/05/Solar-Industry-Diversity-Study-2019-2.pdf>

[A September 2020 report from Citi](#) identified missed revenue gains and missed annual job creation opportunities due to inequitable lending practices economy-wide. “Providing fair and equitable lending to Black entrepreneurs might have resulted in the creation of an additional \$13 trillion in business revenue over the last 20 years,” Citi’s authors wrote. “This could have been used for investments in labor, technology, capital equipment, and structures and 6.1 million jobs might have been created per year.”<sup>11</sup>

Federal investments are critical to overcome these barriers and the circumstances that drive them. The private sector alone cannot undo over a century’s worth of federal and financial policies that deepened segregation and labor discrimination.

Policies like the national Clean Energy and Sustainability Accelerator would address that need by providing for better financing tools for clean energy projects. It would also ensure minority, rural, and low-income communities can:

- gain access to clean energy technologies,
- fund projects, and
- grow jobs across racial and economic lines, as well as geographic ones.

There are many steps lawmakers can take – right now – to ensure greater diversity in the clean energy workforce in the months and years ahead<sup>12</sup>:

#### For workers

- Support education and job training for members of traditionally underserved communities to expedite their involvement in the development of renewable energy solutions.

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<sup>11</sup> [https://ir.citi.com/NvIUklHPilz14Hwd3oxqZBLMn1\\_XPqo5FrxsZD0x6hhil84ZxaxEuJUWmak51UHvYk75VKeHCMI%3D](https://ir.citi.com/NvIUklHPilz14Hwd3oxqZBLMn1_XPqo5FrxsZD0x6hhil84ZxaxEuJUWmak51UHvYk75VKeHCMI%3D)

<sup>12</sup> From a forthcoming E2 (Environmental Entrepreneurs) report: “Help Wanted: Diversity in Clean Energy Jobs”

- Invest in apprenticeship programs in the transportation industry and industry-academic partnerships to prepare underrepresented populations for entry into career positions.
- Enhance and enforce hiring and procurement policies that benefit low-income communities, people of color, and women.

#### For businesses

- Create and fund “green banks” and other financing mechanisms through more traditional financial institutions that can help jumpstart clean energy companies and include specific metrics for investing in minority-owned companies and communities.
- Collaborate with the renewable energy industry to increase business opportunities for minority entrepreneurs and increase diversity of suppliers in the public and private sectors.
- Support and advance clean energy programs, including renewable portfolio and energy efficiency standards, with specific metric for jobs and economic development in economically disadvantaged areas.

#### For communities

- Strategically and cooperatively engage low-income and disadvantaged communities on energy policies at all levels in order to help address the energy and jobs needs of these communities while also protecting the environment.
- Ensure underserved communities that host clean energy resources and facilities--such as solar and wind farms and clean energy and clean vehicle industry factories--directly benefit from the presence of these facilities with jobs and supplier opportunities.
- Design codes, regulations, and policies to address minimum energy, water, and health performance in existing multifamily buildings, while providing resources to support their equitable implementation.

- Adopt adequate funding and performance targets, such as energy savings, for efficiency programs serving under-resourced (low-income) communities.
- Ensure state housing finance agencies make ever-increasing commitments to efficiency and health improvements in Low-Income Housing Tax Credit-funded properties.

## Conclusion

Congress must act to double down on an ambitious strategy to rebuild our nation's economy, infrastructure, and struggling communities. An approach based on leveraging bold and aggressive federal investments in the next generation of clean energy from efficiency, to generation, batteries to support health and more affordable homes, clean reliable transportation, and low-carbon sustainable agriculture.

Robust Federal commitments in this sector will then send the right signal to private-sector investors to get on board.

Congress can help address the broader unemployment situation today by providing pathways to careers in a sector that will be growing for years to come. They can also help ensure the minority communities, rural communities, and communities transitioning from fossil fuel employment are all part of the clean energy jobs of tomorrow.

Tackling the economic costs and harnessing the economic opportunities of climate change make these investments worthwhile. But with millions of Americans still out of work or under-employed, they are an absolute necessity.

A "whole of government" approach to addressing the climate crisis and the related challenges that confront us, begins with this Congress. Ensuring a functioning social safety net for all Americans, investing in modernizing our nation's infrastructure, and workforce training policies will transform our economy. It will grow jobs today and set America on the path of economic success for decades to come.