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GENERATING EQUITY: IMPROVING CLEAN ENERGY ACCESS

AND AFFORDABILITY

THURSDAY, OCTOBER 1, 2020

House of Representatives,

Subcommittee on Energy,

Committee on Energy and Commerce,

Washington, D.C.

The subcommittee met, pursuant to call, at 10:10 a.m., via Webex, Hon. Bobby L. Rush [chairman of the subcommittee] presiding.

Present: Representatives Rush, Peters, Doyle, Sarbanes, McNerney, Tonko, Loeb sack, Welch, Schrader, Kennedy, Kuster, Barragan, O'Halleran, Blunt Rochester, Pallone (ex officio), Upton, Latta, Rodgers, Olson, McKinley, Griffith, Johnson, Bucshon, Hudson, Walberg, Duncan, and Walden (ex officio).

Also Present: Representatives Dingell and Schakowsky.

Staff Present: Jeff Carroll, Staff Director; Sharon Davis, Chief Clerk; Waverly Gordon, Deputy Chief Counsel; Perry Hamilton, Deputy Chief Clerk; Zach Kahan, Outreach

and Member Service Coordinator; Rick Kessler, Senior Advisor and Staff Director, Energy and Environment; Brendan Larkin, Policy Coordinator; Jourdan Lewis, Policy Coordinator; Elysa Montfort, Press Secretary; Joe Orlando, Policy Analyst; Kaitlyn Peel, Digital Director; Tim Robinson, Chief Counsel; Medha Surampudy, Professional Staff Member; Rebecca Tomilchik, Policy Analyst; Tuley Wright, Senior Energy and Environment Policy Advisor; Mike Bloomquist, Minority Staff Director; William Clutterbuck, Minority Staff Assistant; Jerry Couri, Minority Deputy Chief Counsel, Environment & Climate Change; Tiffany Haverly, Minority Communications Director; Peter Kielty, Minority General Counsel; Ryan Long, Minority Deputy Staff Director; Mary Martin, Minority Chief Counsel, Energy & Environment & Climate Change; Brandon Mooney, Minority Deputy Chief Counsel, Energy; Brannon Rains, Minority Policy Analyst; and Peter Spencer, Minority Senior Professional Staff Member, Environment & Climate Change.

Mr. Rush. The subcommittee hearing is called to order. Today the subcommittee is holding a hearing entitled "Generating Equity: Improving Clean Energy Access and Affordability."

Due to the coronavirus, the public health emergency, today's hearing is being held remotely. All of the members and the witnesses will be participating via video conferencing. As part of our hearing, microphones will be set on mute for purposes of eliminating inadvertent background noise.

Members and witnesses, you will need to unmute your microphone each time you wish to speak.

Documents for the record can be sent to Rebecca Tomilchik at the email address that we have provided to your staff. All of the documents will be entered into the record at the conclusion of the hearing.

And now we will begin the hearing, and the chair now recognizes himself for 5 minutes for opening statement.

The ongoing coronavirus pandemic has exposed a series of daunting truths within our Nation. One of these truths is the disproportionate impact of pandemics on our most vulnerable communities and its inability to compound the structural inequalities that afflict our Nation. Today we examine these injustices as we work to achieve a clean energy economy to confront the sweeping pandemic of climate change and to ensure equitable access to clean energy technologies and their benefits.

Communities of color, low-income communities, and indigenous communities are disproportionately burdened by a traditional energy production system. According to the NAACP, nearly 70 percent of Black Americans live or have lived within 30 miles of a coal-fired power plant and, as a result, experienced adverse health consequences

associated with the production of energy at these plants.

In addition to this, communities of color and low-income communities spend a higher percentage of their household incomes on electricity bills. According to an EIA report, 25 million of these households have foregone necessities like food and medicine to pay their electricity bill, many of which are faced with this decision each and every month.

In conjunction with this, low-income households are also at a higher risk of utility shutoffs, which effectively leaves them without access to a vital resource amid the ongoing pandemic.

Given these circumstances, we must improve access to clean energy technologies and the affordability of their benefits within the frontline communities to lower electricity bills, improve air quality, and reduce energy insecurity. A recent report by the American Council for an Energy-Efficient Economy demonstrates that energy efficiency and home winterization strategies have the ability to reduce low-income energy burdens by up to 25 percent.

The National Renewable Energy Laboratory also suggests nearly half of all U.S. residential rooftop solar potential exists on the existing roofs of low- and moderate-income households who would directly benefit from these resources.

The committee has worked to establish both short-term and long-term incentives to achieve these objectives through legislative proposals. Today it is my hope that the subcommittee and its witnesses will identify pathways and potential policies to address the various -- that impede clean energy accessibility and affordability among these communities.

I want to thank all of the witnesses for their participation in this hearing.

And today I am going to yield right now to the chairman of the full committee, Mr.

Pallone, for -- I want to recognize Mr. Upton, rather, the ranking member of the subcommittee, for 5 minutes for his opening statement.

[The prepared statement of Mr. Rush follows:]

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Mr. Upton. Well, thanks Mr. Chairman. Nice to see you. I am glad we got --

Mr. Rush. The same to you.

Mr. Upton. I know we got started a bit late, but I am glad everything is working.

I appreciate today's hearing on energy access and affordability for sure. It is very timely as we head into the winter months, still battling COVID and the economic fallout from the pandemic.

Here in the U.S., of course, we are blessed with the most reliable and affordable supplies of energy and electricity in the world. Diversity is the key to our success, which is why I support, many of us, all of us support, I hope, an all-of-the-above approach to energy.

Nationwide our top sources for electricity generation in ranked order are natural gas, then coal, nuclear, wind, hydropower, and solar. Most Americans and businesses rely on gasoline and diesel for their transportation needs; we know that. And last year petroleum products accounted for some 96 percent of total energy use for transportation; electric vehicles, far less than 1 percent.

So it is important to understand why we as a Nation have such a diverse fuel mix and how it makes us more secure and more competitive than other nations. In the Pacific Northwest, they have got plenty of cheap hydro. Some parts of the country have more wind, more sun, or more fossil fuel resources, and in some States, of course, nuclear energy makes the most sense. In reality, it is the weather, the population, and geography that varies so widely across the country making it impossible to make sweeping generalizations.

In Michigan, households use more energy than the U.S. average. When the temperature drops, we use a lot more natural gas for electricity to heat our homes

because it is more efficient and more affordable. We also use a lot of propane, particularly in the Upper Peninsula, in rural areas. That is why the one-size-fits-all Federal mandate, like proposals to ban natural gas and gasoline cars, doesn't work in States like Michigan.

Instead, the proper role of the Federal Government is to promote innovation and technological development and to ensure competition and consumer choice. It would be foolish to bet it all on one technology or energy resource. Congress doesn't have a crystal ball. Rather than mandate a top-down clean energy standard or a ban on fossil fuels, let's learn from the experience of all 50 States.

California's rush to green -- even though it may have a good first name time, right, Bobby -- is a perfect example. They have monopoly energy providers, an unstable grid that is prone to blackouts, and the Nation's highest prices. I have got serious concerns about a forced transition to implement the California standard nationwide.

With that, I look forward to today's hearing to learn about what Congress can do to make energy more reliable and certainly more affordable for all Americans.

I would also like to welcome the first witness, Dr. Reames. I plan to use today's hearing to focus on ways to promote innovation and new technologies. I think it is going to be useful to examine the lessons learned from States like California that appear to be struggling to provide reliable and affordable energy to consumers. In Michigan and States like Texas that are leading the Nation, we have got different models for incorporating clean energy. The key is to keep prices stable and affordable.

I look forward to a discussion about carbon-free nuclear energy, which is, of course, vital to meeting our shared clean energy goals.

The bottom line is we all want to see cleaner energy technologies, but whether we

are talking about power generation or passenger vehicles, we are not going to get there by picking winners and losers. We should learn from the failure of the past and work together to make energy more affordable, reliable and affordable.

With that, I look forward to our witnesses today and the interaction. Welcome, everybody.

And, with that, I yield back the balance of my time.

[The prepared statement of Mr. Upton follows:]

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The Chairman. Am I supposed to speak?

Mr. Rush. The chair now recognizes Mr. Pallone, the chairman of the full committee, for 5 minutes for the purposes of an opening statement.

The Chairman. Thank you, Chairman Rush. Thank you for holding this important hearing on both energy affordability and clean energy access. Chairman Rush has been passionately working on including communities of color in the clean energy transition, especially through his blue collar and green collar jobs bill, and I thank him for his leadership on this and so many things.

Energy access and energy burden often do not get the attention they deserve. Throughout the country, low-income households and particularly communities of color face disproportionate negative impacts on traditional fossil fuel generation due to their proximity to power plants and the lack of clean energy options. And these communities see increased risks of polluted air and water, resulting in a greater likelihood of health conditions, like asthma or cancer. They also disproportionately suffer the devastating effects of fossil-fueled climate change, like severe damage and flooding to their homes during hurricanes. While we are all affected by climate change, we have to make sure that no one is overlooked in their efforts to build a clean and resilient future.

Along with climate and environmental threats, communities of color are also disproportionately affected by the COVID-19 pandemic. Americans in all regions are suffering from job loss and are spending more time at home, but that means that many of them are bringing home a lot less money than they were before the pandemic, and their energy bills are going up because they are using more energy at home, and it is just pushing struggling families further to the edge.

And as we experience a public health and economic crisis, unpaid electricity bills

and the threat of electricity shutoffs should not be something struggling families are concerned about right now. Over 800,000 low-income customers are currently at risk of having their electricity shut off by their electric utility company, these communities, which already experience higher rates of COVID-19, are now being forced to deal with the potential loss of power. It is really an outrage, particularly since we included a moratorium on electricity and water shutoffs from the HEROES Act that passed in May, and that was 4 and a half months ago, but Senate Republicans have refused to act, and now we are again working to protect these valuable communities with a shutoff moratorium in our updated HEROES legislation, which may come up today. It is long past time for President Trump and Senate Republicans to recognize the need to act.

This assistance is critical right now because the pandemic is only exacerbating an unfortunate trend that already existed that many struggling families face high energy burdens. They are spending a higher percentage of their paychecks on energy because of factors like income, location of where they live, and the quality of the building where they live. Yet while low-income energy assistance programs exist, they have limited funding.

In the updated HEROES Act, we include \$4.5 billion to the Low-Income Home Energy Assistance Program, LIHEAP. And last week, the House passed the Clean Economy Jobs and Innovation Act, which included numerous bills from the committee that support low-income clean energy projects, energy-efficiency programs, and rural energy development. And I think that bill is a step in the right direction for a clean and equitable energy future.

The transition to a clean energy economy has to be equitable and affordable. We must include all Americans in this enormous effort to ensure that no communities are abandoned or face the threats of climate change by themselves.

And, again, thank you, Chairman Rush, for taking the lead on so much of this. I would like to yield the remainder of my time to the gentlewoman from Michigan, Mrs. Dingell.

[The prepared statement of The Chairman follows:]

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Mrs. Dingell. Thank you, Mr. Pallone, for yielding.

I would like to briefly recognize a wonderful witness from the University of Michigan, who my colleague from Michigan also recognized, Dr. Tony Reames, a Ph.D., who is assistant professor in the School for Environment and Sustainability at the University of Michigan, located in the heart of my district. Go Blue.

Dr. Reames is a multidisciplinary scholar who has expanded the study of environmental justice to specifically focus on energy justice. Currently, Dr. Reames is exploring disparities that exist in residential energy generation consumption and affordability, focusing on the production and persistence of inequality by race, class, and location.

Dr. Reames, thank you for being here. You are going to provide this committee with a lot of important information, and there is just so much this committee can learn from you and from the other witnesses today. We look forward to your testimony -- and the other witnesses.

And I would also like to thank the chairs of the full committee and the subcommittee for the work that has been done in the HEROES Act in working with Rashida and I. It is very, very important.

And I yield back.

[The prepared statement of Mrs. Dingell follows:]

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The Chairman. I yield back as well, Chairman Rush.

Thank you, Mrs. Dingell.

Mr. Rush. The chair now recognizes Mr. Walden, the ranking member of the full committee, for 5 minutes for the purposes of an opening statement.

Mr. Walden. Well, good morning, Mr. Chairman, and colleagues, as well as our witnesses. Thank you all for your participation today.

Today's hearing will examine an important topic concerning access and affordability of energy for low-income or otherwise disadvantaged households. As a result of the COVID-19 related shutdowns and economic hardships, energy cost burdens have become more common. Sadly, many Americans now know what it is like to have to live on limited resources to pay to keep the lights on, the air-conditioning running, the car fueled. Fortunately, the economy is beginning to rebound a bit, and there is help available for many of these families.

Data from the American Council for an Energy-Efficient Economy, which we will hear from this morning, indicates 26 million households face a high energy burden. This means 6 percent or more of these households' spending goes towards energy, and this does not include fuel for necessary transportation, which further adds to the burden.

The Department of Energy data showed the States with the highest low-income energy burdens, 10 percent or higher are in the Southeastern United States where the most electricity is used for heating and cooling. Low-income households in that region use approximately 36 percent more electricity than the national average for low-income households in other regions of the country. Fortunately, Southeastern States also enjoy some of the lowest electricity rates in the Nation.

So imagine the impact on low-income households in Mississippi, Alabama,

Georgia, or South Carolina if energy prices drove up the price of -- or energy policies drove up the price of electricity so much they had to pay the same rates as residents of Connecticut, where energy prices are nearly twice as high. Or consider other parts of the country, like my home State of Oregon. If policies driven by the radical environmentalists severely curtailed our State's dominant hydroelectric production, what would that mean to low-income households if we doubled our electricity rates to those of California levels? What would it mean for our ability to provide energy assistance?

So there are many State and Federal programs aimed at relieving American families' energy burdens. These include efficiency and weatherization programs at the Department of Energy and subsidy programs at the Department of Health & Human Services, programs which are authorized by this committee.

Several witnesses this morning will talk about ways to improve coordination among Federal programs and how we measure poverty to expand energy access and affordability.

My point here is that whatever the value of these programs, we cannot lose sight of the powerful impact Federal, State, and local energy policies, including clean energy, have on the underlying affordability and reliability of energy. Renewable energy sources have a place, they certainly do, but they cannot come at the expense of families who are already struggling to make ends meet. Policies that drive up energy prices or curtail access to energy sources conflict directly with efforts to confront poverty. These policies risk depriving people of the key component of community and household prosperity. Access to affordable, reliable energy is essential for jobs and [inaudible] opportunities, especially in lower income communities.

This is plainly evident in the expensive energy policies of California. Mandates or regulatory policies are raising prices seven times faster than the rest of the Nation, as we

will hear this morning. That is driving out high-paying energy jobs [inaudible] thousands of jobs with zero-emissions nuclear energy.

New policies seeking to end use of natural gas and gas-fueled vehicles will further drive up policy and transportation costs, which is especially harmful to the working poor, who often have to commute great distances.

Robert Bryce, who is testifying today for the Foundation for Research on Equal Opportunity, will provide some useful perspective we should all keep in mind so we can compare [inaudible] clean energy systems.

Throughout this Congress, Republicans have advocated for practical approaches to address climate risks and improve and protect the environment. We have advocated for removing regulatory barriers to promote innovation and to posture the deployment of new clean energy sources. Our view has been that the surest path to cleaner energy systems is to put the energy consumer front and center so we do not undermine our Nation's ability to make and do things nor to deprive people their opportunities for prosperity.

We know this can work because we have seen the benefits in cleaner air, world leading reductions in carbon emissions, and, at least prior to COVID-19, an increasingly productive economy. We should not lose sight of that larger picture as we work together on policies to help those most in need.

With that, Mr. Chairman, I yield back the balance of my time.

[The prepared statement of Mr. Walden follows:]

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Mr. Rush. I want to thank the gentleman.

The chair would like to remind members that, pursuant to committee rules, all members' written opening statements shall be made part of the record.

At this time, I would like to recognize our witnesses for today's hearing.

The first witness that I want to recognize is Ms. Ariel Drehobl. She is a senior research associate for local policies at the American Council for an Energy-Efficient Economy.

She will be followed by Dr. Tony Reames, the assistant professor for the School of Environment and Sustainability at the University of Michigan.

Our next witness will be Mr. Robert Bryce, the visiting fellow for the Foundation for Research on Equal Opportunity.

And, lastly but not the least, our final witness will be Ms. Alexandra Wyatt, the policy and regulatory manager for GRID Alternatives.

And I want to thank each and every one of our witnesses for appearing before us today, and we certainly look forward to your testimony.

Ms. Drehobl, you are recognized for 5 minutes for an opening statement.

**STATEMENTS OF RIEL DREHOBL, SENIOR RESEARCH ASSOCIATE, LOCAL POLICY,
AMERICAN COUNCIL FOR AN ENERGY-EFFICIENT ECONOMY; TONY G. REAMES, PH.D.,
ASSISTANT PROFESSOR, SCHOOL FOR ENVIRONMENT AND SUSTAINABILITY,
UNIVERSITY OF MICHIGAN; ROBERT BRYCE, VISITING FELLOW, THE FOUNDATION FOR
RESEARCH ON EQUAL OPPORTUNITY; AND ALEXANDRA M. WYATT, POLICY AND
REGULATORY MANAGER, GRID ALTERNATIVES**

STATEMENT OF RIEL DREHOBL

Ms. Drehobl. Chairman Rush, Ranking Member Upton, and members of the subcommittee, thank you for the invitation to speak at this hearing on "Generating Equity: Improving Clean Energy Access and Affordability." My name is Ariel Drehobl. I am a senior research associate at the American Council for an Energy-Efficient Economy, also known as ACEEE, and I am the lead author of ACEEE's newly released energy burden report.

ACEEE is a nonprofit organization that acts as a catalyst to advancing energy-efficient policies, programs, technologies, investments, and behaviors so that all households can experience equitable benefits from energy efficiency.

Over the past 5 years, ACEEE has published three reports that analyze energy burdens across different populations. Energy burden is the percentage of annual income a household spends on its annual energy bills, and the energy burden metric is used widely to measure inequity in the energy sector.

On September 10, we published a new report which calculates energy burdens nationally, regionally, and in 25 of the largest metro areas. From the study, we found

that energy affordability is a persistent national challenge. Of all U.S. households, 25 percent face a high energy burden, meaning that they pay more than 6 percent of their income on energy bills, and 13 percent face a severe energy burden, meaning they pay more than 20 percent. Low-income households fare the worse. Nationally 67 percent of low-income households face a high energy burden, and 60 percent of low-income households with a high burden face a severe burden. Low-income households spend three times more of their income on energy costs compared to other households. And compared to non-Hispanic White households, the median energy burden for Black households is 43 percent higher, the median for Hispanic households is 20 percent higher, and the median for Native American households is 45 percent higher.

This research shows that energy burdens are not equitable and that policy action is needed to improve energy affordability. High energy burdens are associated with inadequate housing conditions and have been found to affect physical and mental health, nutrition, and local economic development.

Researchers have found that high energy burdens are correlated with older, inefficient, and unhealthy housing, which is itself associated with other negative health impacts. These households are more likely to stay caught in cycles of poverty. Bringing policies to address high energy burdens can ensure a more just and equitable energy system.

COVID-19 has had a tremendous impact on energy affordability. More than 40 million Americans have filed for unemployment since the start of the pandemic, and many of them are low income. More than one-fourth of those who have lost jobs have reported skipping a utility bill payment.

Black, Hispanic, and Native American households are disproportionately burdened by COVID-19. They face greater long-term exposure to air pollution, and they are more

likely to face energy insecurity, economic instability, and chronic diseases.

By expanding energy-efficiency programs, we can reduce overall energy consumption and our reliance on fossil fuels. Energy efficiency and weatherization provide a long-term solution to reducing high energy burdens. These strategies should complement bill-paying assistance and programs aimed at energy-saving education and behavior change.

In our report, we estimate that weatherization can reduce the median low-income households' burden by 25 percent, making this investment an effective strategy to reduce high energy burdens while also benefiting the environment. These investments are especially important in the wake of the pandemic as they can also help stimulate the economy by creating local jobs while helping households afford their energy bills in the long term.

Congress can take action to improve equity in the clean energy sector. We recommend expanding the low-income Weatherization Assistance Program and include funds for health-related home improvements. WAP currently serves about a hundred thousand homes per year through community funding and leverage funds from the Low-Income Home Energy Assistance Program. This number is far below the 15.7 million severely energy burdened households in the U.S. At this rate, it would take 360 years to weatherize all eligible households.

Weatherization can also stimulate the economic recovery by creating green jobs, maintaining employment for thousands of small business, and provide updates to furnaces and air ventilation that are critical to those most vulnerable to the impacts of COVID-19.

Congress can also increase funding for LIHEAP, leverage Medicaid funding to improve health and efficiency in homes, address efficiency and affordable local family

housing, and provide national guidance on how to protect the home health of Americans during this public health crisis.

In conclusion, energy and security is a persistent national challenge that has been worsened by the global pandemic and economic crisis. Increasing investment in low-income energy efficiency and weatherization can provide a long-term solution to reducing high energy burdens for low-income households.

I thank the subcommittee for the opportunity to speak on this critical issue, and I welcome your questions and yield back the rest of my time.

[The prepared statement of Ms. Drehabl follows:]

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Mr. Rush. I want to thank the gentlelady.

And, Dr. Reames, you are recognized now for 5 minutes.

STATEMENT OF TONY G. REAMES, PH.D.

Dr. Reames. Good morning.

Chairman Rush and Pallone, Ranking Member Upton and Walden, Congresswoman Dingell, and members of the subcommittee. It is an honor to appear before you today, and I thank you for inviting me to discuss the importance of an equity-based approach to improving clean energy access and affordability.

My name is Tony Reames. I am an assistant professor in the School for Environment and Sustainability at the University of Michigan, and I lead the Urban Energy Justice Lab, which conducts research on the production and persistence of spatial, racial, and socioeconomic disparities, and energy access, affordability, and policymaking.

As Ms. Drehobl testified, stark disparities exist in U.S. energy burdens. Both urban and rural low-income households spend substantially greater proportions of their income on energy costs when compared to non-low-income households. Moreover, Black, Latinx, indigenous, elderly, and multifamily and renter occupied households are disproportionately impacted by high energy burdens. This leaves millions of Americans in energy poverty.

Estimates before the coronavirus pandemic found that 25 million households had to forego food and medicine in order to pay their energy bills, 17 million households faced energy shutoff, and 6 million households were unable heat or cool their homes due to being disconnected. And we know that the pandemic has only exacerbated these

issues as the same communities reeling from COVID-19 are racking up massive utility debt and fear the imminent end of shutoff moratoriums.

Thus, as policy discussions consider the transition to cleaner energy technology, acknowledging the nuance of energy poverty is critical to ensuring the transition is just, equitable, and affordable for all.

Investments in residential energy-efficiency improvements have long been a key site of intervention to reduce energy burdens with additional economic and environmental benefits. However, an equitable investment in energy efficiency must account for disparate vulnerabilities of groups most likely to reside in the least energy-efficient housing.

Our research shows that homes and neighborhoods with lower median incomes, more households below the Federal poverty level, and more racial ethnic minority head of households on average are less energy efficient. Furthermore, the persistence of racial segregation in America increases the energy poverty vulnerability of Black and Latinx households.

As we implement policies and programs to transition to a cleaner energy future, individual adoption of new technology is crucial. Therefore, new technology must be accessible and affordable for all. However, our research shows that even entry level clean energy technology, such as LED bulbs, can be both less available and more expensive in communities where households would benefit most from the energy savings provided by these products.

Moreover, millions of households that fall into the gap between qualifying for low-income energy assistance programs and having the resources to cover upfront costs for improvements have few to no avenues for improving energy efficiency in their homes or accessing renewable or other clean energy technology.

There are several actions Congress can take to address the disparities in clean energy access and affordability that we raise in our research. Components of legislation, such as the Clean Economy Jobs and Innovation Act and the Housing is Infrastructure Act are good examples.

In my written statement, I discuss the need for a national energy poverty and justice strategy and potential approaches that can be taken.

First, we can explore the feasibility of restructuring and integrating the Low-Income Home Energy Assistance, Weatherization Assistance, and other energy-related assistance programs into a streamlined comprehensive strategy for Federal energy assistance.

Second, develop a national framework to identify and quantify current residential energy equity gaps across geographies, race, ethnicity, income, and other social demographic groups.

Third, determine whether individual or place-based approaches to policy design and implementation best address the identified energy disparities.

And, fourth, establish measurable equity goals and transparent mechanisms for tracking progress, such as energy poverty reduction goals or employment equity targets in the clean energy industry, and institutionalize these equity metrics and set new policies, funding, and evaluation.

Again, I would like to thank Chairman Rush, Ranking Member Upton, and members of the subcommittee for this opportunity to discuss an important and timely issue, and I look forward to your questions and comments.

Thank you.

[The prepared statement of Dr. Reames follows:]

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Mr. Rush. The chair thanks Dr. Reames.

Dr. Bryce, you are recognized for 5 minutes.

STATEMENT OF ROBERT BRYCE

Mr. Bryce. Good morning, Mr. Chairman. Thank you. I am not a doctor. I am barely a mister, but I appreciate the honorific.

My name is Robert Bryce. I am a journalist. I am a filmmaker. I am a podcaster. I have been writing about the energy business for 30 years. I am also a visiting fellow at the Foundation for Research on Equal Opportunity.

These discussions about energy burden are important and, as Dr. Reames and Ms. Dreihobl pointed out, very timely. But more attention must be paid to how policies designed to address climate change are resulting in higher energy prices for low-income ratepayers and consumers.

I will talk about three issues this morning: Renewable energy mandates, natural gas restrictions, and electric vehicles.

California has mandated the State's electric utilities procure at least 60 percent of the electricity they sell from renewables by 2030 and to be selling 100 percent zero carbon electricity by 2045. The imposition of these mandates over the last 12 years has coincided with a dramatic increase in our electricity prices. Between 2011 and 2019, according to the Energy Information Administration, the average price of electricity in California for all users has jumped by nearly 30 percent. That is more than seven times the rate of increase in the rest of the U.S. California now has the highest electricity prices in the Continental U.S. outside of the Northeast.

In Ontario, Canada, after the province introduced the Green Energy Act and shuttered traditional generation plants and began providing big subsidies for renewables, electricity prices soared. Between 2008 and 2016, residential electric rates in the province jumped by 71 percent, which was more than double the average seen in the rest of Canada over that time period.

Germany, which has pledged to slash its greenhouse gas emissions by 95 percent by 2050, has seen its electric rates also increase dramatically. Between 2007 and 2018, according to the think tank Agora Energiewende, residential electric rates in Germany jumped by 50 -- 50 -- percent. German residential customers now pay the highest rates in Europe, about 37 cents per kilowatt hour, which is three times the average residential rate here in the United States.

So why are these renewable mandates pushing up prices? Last year, Michael Greenstone and Ishan Nath of the University of Chicago published a study which concluded that renewable energy mandates lead to -- I am quoting -- substantial increases in electricity prices that mirror the programs' increasing stringency over time.

The report said the intermittent nature of renewables meant that backup capacity must be added and that, by mandating an increase in renewable power, base load generation is prematurely displaced and some of the cost is passed to consumers.

Bans and restrictions on natural gas will also mean higher prices. As I noted in a recent report for the Foundation for Research on Equal Opportunity, more than 30 local governments in California have passed bans or restrictions on the use of natural gas in buildings. These restrictions are being done, of course, in the name of climate change, but they are in practice a form of energy taxation. By banning the direct use of natural gas, these regulations will force homeowners and renters to use electricity instead, which costs four times as much per joule of energy delivered as natural gas. These higher

energy costs could amount to hundreds of dollars per year for each household.

Finally, electric vehicles, these aren't -- the subsidies and mandates are, in fact, a form of regressive taxation. As pointed out by Assemblyman Jim Cooper from California, one California Senate district in the Bay Area has collected EV rebates from the State totaling more than \$55 million. That is more than has been collected by seven other senate districts in the State combined so that you have residences and homeowners, families in low- and middle-income senate districts subsidizing luxury electric vehicle purchases by wealthy individuals in the Bay Area. This makes no sense.

Subsidies are only part of the cost. Consumers are also facing dramatic -- potentially dramatic increases in electricity prices to pay for public charging stations needed to refuel the costs for those cars. I have calculated, in California alone, the increase in electricity use due to electrification of that State's electric transportation could result in an increase in electricity demand in California of 50 percent. This is in a State that is already experiencing blackouts.

In summary, these efforts to increase access to clean energy are laudable, but policymakers must be paying attention. If we want to decrease inequality, policymakers have to be attentive so that the costs of decarbonizing America's enormous energy and power sector is not borne by low- and middle-income American families.

Thank you.

[The prepared statement of Mr. Bryce follows:]

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Mr. Rush. The gentleman yields back.

And the chair now recognizes Ms. Wyatt for 5 minutes for an opening statement.

STATEMENT OF ALEXANDRA M. WYATT

Ms. Wyatt. Thank you very much. Chairman Rush, Ranking Member Upton, Chairman Pallone, distinguished members of the subcommittee, thank you.

My name is Alexandra Wyatt, and I am here on behalf of GRID Alternatives, where I am policy and regulatory manager. GRID is the Nation's largest nonprofit solar installer and a leader in helping low-income communities, communities of color, and Tribal communities nationwide get clean, affordable solar power and solar jobs.

Since 2004, we have served more than 16,000 families, all low-income households and tenants of affordable housing, with residential, multifamily, and community solar systems that have brought them more than \$400 million in lifetime savings. We administer a number of equity-focused solar, clean mobility, and workforce training programs.

There are few more urgently needed and high return investments our society can make than mitigating climate change through eliminating greenhouse gas emissions, preventing needless death and suffering by reducing toxic pollution, and reducing high energy burdens that contribute to economic insecurity and worse, crises that all result largely from our traditional energy system and that all disproportionately hurt low-income communities and communities of color.

The dollar value of addressing these problems is in the trillions, and their importance in matters of racial and economic justice is invaluable. Undervaluing and

externalizing these problems has stacked the deck in favor of fossil fuels artificially and unfairly. Yet, luckily, the clean energy transition already underway can help solve all of these problems at once, while spurring economic development. Policy choices will determine whether and how well it does. GRID's work shows that it is possible.

Through policies that get pollution sources out of underserved communities and clean healthy zero-carbon resilient local energy solutions into them while protecting communities that have depended on fossil fuels for their livelihoods, Congress can seize the opportunity to leverage the clean energy transition as a solution to some of our country's highest needs, including equity and racial justice.

GRID has seen firsthand how expanding access to clean energy can solve multiple problems. When families, like our clients, struggling with high energy burdens, particularly now in the pandemic, have access to bill savings from solar, they get significant, long-term financial relief. That then leads to social stability, economic development, and community health. When clean energy solutions are combined for underserved communities, like solar plus efficiency, weatherization, electrification, electric bikes or cars and chargers, and storage, their benefits multiply.

When a more diverse range of communities sees clean energy technology as a viable solution, markets can move beyond early adopter phases and scale faster. When communities have control and ownership over their energy, their energy systems better meet their needs and their energy dollars stay local. When there are accessible and inclusive on-ramps to well-paying jobs in the fast-growing clean energy industries, industries get the skilled and diverse work force they need, and more Americans can support their families.

Last but far from least, when communities at the front lines of the climate crisis have energy storage and resilience, devastation from such is reduced. And when

pollution from traditional energy sources no longer poisons the disproportionately low-income Black and Brown communities outside their fence lines, those communities won't suffer and die from the health problems, neighborhood disinvestment, and other effects resulting from that environmental injustice. They can breathe.

Despite all of these benefits, low-income households face a number of barriers to clean energy even though they often benefit the most.

On top of threshold financial hurdles of lack of access to capital and credit, lower income households may be shut out of incentives like the Federal investment tax credit. Other obstacles may include language, education, mistrust, homeownership status and housing conditions more often in these communities. Well-designed community solar programs can overcome some of those barriers, but they are not available everywhere. All together, these barriers contribute to market disinterest in the absence of targeted intentional policies and investments.

My written testimony makes a number of specific policy recommendations to address these barriers. They are drawn from GRID's years of direct on-the-ground-and-roof experience working exclusively with low- and moderate-income households and underserved communities. They are also informed by our partnerships with community-based organization; though, to be clear, we don't purport to speak for the communities we serve or substitute for their own input.

To summarize, first, equitable and just processes are necessary for success. Frontline communities aren't just experts on equity issues. They are experts, period. People closest to the problem are closest to the solution; however, they are often not actively included in decisions early on.

Second, financial hurdles are threshold barriers for low-income and low-wealth families. Policy and investments recognize this and cite incentives to enable clean

energy with no upfront or variable costs. The investments can be made in a number of means, including careful coordination with existing energy assistance programs. The ITC should be extended with a direct pay option to make it available to low-income households, as well as nonprofits and Tribes, as ineligibility puts them at a competitive disadvantage. Well-designed policies won't shift any additional costs on to low-income taxpayers or ratepayers.

Third, policies must comprehensively account for the many wide-ranging and intertwined benefits of clean energy access, including racial equity and work force development. GRID's work shows that models combining these benefits work.

Finally, it is not just electric power that people need, but also political power, powers in their communities, and power over their own futures. Policymakers can use a number of strategies to promote local community-level ownership and control over energy systems.

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

[The prepared statement of Ms. Wyatt follows:]

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Mr. Rush. The chair wants to thank all of the witnesses for their opening statements, and we have concluded the opening statements.

And now we will move to member questions. Each member will have 5 minutes to ask questions of the various witnesses.

I will start by recognizing myself for 5 minutes.

The ongoing coronavirus pandemic continues to demonstrate the importance of affordable energy and its relevance to our most vital and basic needs.

Dr. Reames, you are the founder and director of the University of Michigan's Urban Energy Justice Lab. Given your energy justice research, would you describe the importance of viewing energy-related topics and airing of topical discussion through what we would call a justice lens?

Dr. Reames. Yes, Chairman. Thank you for that question.

The whole idea behind energy justice is that a just energy system fairly disseminates both the benefits and costs of energy services and is also representative and impartial in energy decisionmaking.

I started this work during our last crisis, the economic recession, and was really impressed by a policy that or a program that Congressman Cleaver proposed in Kansas City called the Green Impact Zone. And this project looked at concentrating Federal dollars from the stimulus in one area, recognizing the disproportionate challenges that disinvested urban communities, African-American communities experience. And a big component of that was focusing on energy, whether it was access to renewable, access to clean energy technology such as energy efficiency. And in studying that and looking at this issue across the country, again, you see that, you know, vulnerable communities are living in less efficient housing, have less access to energy-efficient technology and

appliances, and if those things are available, they are more expensive and so they can't afford them.

So this idea that if we want to transition to a cleaner energy future, we can't disregard the vulnerability that communities already face, and that is across race. That is across income groups. There are gender disparities in energy access participation. And so a justice idea not only recognizes existing vulnerabilities but ensures that decisionmaking doesn't focus on just equality but actually equity.

Mr. Rush. I want to thank you, Dr. Reames.

Mr. Drehobl, under this current administration, DOE has failed to update or even rolls back essential energy-efficiency standards. How does this impact the availability and the affordability of these energy technologies within vulnerable communities?

Ms. Drehobl. Thank you for the question.

DOE has already missed the legal deadlines to update product standards. A recent report from ACEEE has found that updates to existing standards could save \$43 billion per year on utility bills for your families by 2035. Because low-income households already spend three times more of their income than other households, the loss of these savings will hit them harder. Low-income households are often renters or live in multifamily housing, and they don't always have direct control over what appliances are in their homes, and landlords frequently buy the cheapest or the least efficient models. But standards can ensure that they are replaced with more efficient versions when the time arises for replacement. Failure to update standards breaks the cycle and leaves less efficient appliances in place as they are being replaced for low-income households.

So, you know, not updating standards definitely has an impact on low-income households in this way and doing so could save a lot of money for U.S. families on their

energy bills.

Mr. Rush. Ms. Wyatt, in the statute, FERC has established Federal energy capacity marketing rules that can come at a cost to consumers that hinder marketing access for clean energy sources. In what ways will these rules impact clean energy accessibility and affordability within vulnerable communities?

Ms. Wyatt. Thank you, Mr. Chairman.

As you say, these types of Federal decisions absolutely impact vulnerable communities, in this particular decision that you are referencing, negatively.

First, it is key that State support for clean energy correct market distortions without, you know, an economywide carbon price or something like that, that forces polluting resources to internalize this whole cost escalation, which are enormous and unjust, the resource mix is inefficiently weighted towards these resources, not a level playing field. But FERC has failed to recognize that. And how the decision works, you know, even as distributed clean energy growers -- and to be clear, distributed energy is GRID's area of work -- utilities still have to source wholesale energy in much of the mid-Atlantic and Northeast and Midwest.

This happens through the PJM regional transmission organization and their auction mechanism. Unfortunately, this mechanism is indifferent to resources, environmental and equity profiles. And the recent decision from FERC further overrides State support for clean energy. So the minimum offered price rule, or MOPR, prevents wholesale energy sellers from recognizing State support in their offers, pushing bids higher than what they would otherwise be. And if that sounds like it directly raises prices for utility ratepayers, including those like our clients who can least afford it, it does.

It also slows climate action again with inequitable impacts on vulnerable communities because some renewable resources won't be able to clear it in that market.

Mr. Rush. And my time is -- it is the end of my time. So would you conclude your answer, please?

Ms. Wyatt. Sure, thank you.

Yeah, the long and short of it is that, you know, the FERC decision forces States to provide greater support to clean energy resources, making them more expensive, or cut back on climate policy. And it is worth taking a fundamental look at FERC's role in including climate and equity in their mandate.

Mr. Rush. Thank you very much.

The chair now recognizes Mr. Upton, the subcommittee ranking member, for 5 minutes for purposes of asking questions of the witnesses.

Mr. Upton. Well, thanks again, Mr. Chairman, and thanks to our witnesses for their testimony.

I would say I have always been a huge supporter of clean energy, but, obviously, issues like reliability and affordability are critical. In Michigan, we have had a clean energy standard. It was passed by our State legislature, I don't know, 80 years ago or so. It has helped spur utility investments, keeps prices relatively low and stable, and that is in large part because we have a pretty diverse fuel mix.

And I would note that, a couple of weeks ago, I was down in Niles, Michigan, which is just north of South Bend on the State line, and literally they are building a new gas turbine electric facility, natural gas for electricity, and it is going to be the most efficient natural gas facility probably within 300 or 400 miles of that spot. So they are encouraged. And, of course, in Michigan we have seen the closing -- or we will see the closing of a number of coal plants as we meet the renewable standards, which are going to, frankly, probably double in terms of the percentage over the next 10 or 15 years.

I want to see us continue to lead the Nation, but I am worried about going the

same route as California, imposing a national clean energy standard. They have rushed ahead with some pretty strong renewable mandates, natural gas bans, which, of course, would impact this new facility in Niles, a billion-dollar facility in a relatively small town. EV subsidies, a new ban on gasoline cars, obviously, would impact Michigan in a pretty big way. And, of course, we know that California's utility bills are among the highest in the Nation, rapidly rising. The grid has been unstable. We have seen that particularly with the fires. And as you said, Mr. Bryce, they would expect perhaps a 50-percent increase in the electricity demand.

Mr. Bryce, where are they going to get that electricity knowing this path that they are on?

Mr. Bryce. Well, Mr. Upton, I have no idea, and it doesn't appear that California has a plan. They relied heavily -- have been relying heavily on imports, and that was what led to the rolling blackouts that occurred in August. I would point out that California has these mandates for renewables, but it is a State where it is extraordinarily difficult to build new renewable energy capacity. In fact, the amount of wind energy capacity in California has been flat essentially since 2013. Since last December, two major wind projects have been rejected in the State of California, one in Humboldt County and one, I think it was just in April, near Lompac. So California -- in fact, they recently rescinded moves to prematurely close some of their gas-fired generation because they realized that they couldn't afford to keep that -- they needed those plants to stay on line to ensure grid reliability.

So I think California provides a case study on a lot of different fronts. But, first and foremost, is the land use question because these discussions about moving the entire economy and they -- you know, the people that are pushing for these kinds of policies to have economywide renewables are completely ignoring the land use challenge. And I

have documented this.

Over the last 6 years, over 280 communities or local governments from Maine to California have rejected or restricted wind energy projects. We are seeing increasing resistance to solar energy projects. If you can't build it in California, where do they think they are going to put it? Well, somewhere else? You can't build it in Vermont. There are no wind projects being built in Bernie Sanders' home State.

The same thing applies to high-voltage transmission, which is other critical part of this discussion, which is not being included. But the best renewable sources are outside of cities. I have rooftop solar. I believe in the growth of solar. It is going to continue growing. But the challenge in siting the scale of the renewable capacity that will be needed in California or any other State is just enormous.

Mr. Upton. Well, didn't they have problems years ago when they were looking at doing a major solar farm there and they were sued because they weren't able to get access to the grid to be able to send that renewable solar power to parts of the State?

Mr. Bryce. Mr. Upton, I don't know. I can't answer that question. I do know that the siting of the large thermal solar projects in the State have been very controversial because of their impacts on desert communities. And, you know, I think one of the -- the key challenges there for California, this is a State that has the highest poverty rate in America, and yet their electricity rates are continuing to rise, and this is bad for low- and middle-income consumers, and I think these problems are going to be even worse in the years to come in California, unfortunately.

One last point, San Bernardino County, the largest county by area in America, last year banned all large-scale renewables. So if you can't build them in San Bernardino County in California, again, where are you going to put it? These land use issues are key to this entire discussion and almost completely ignored.

Mr. Upton. I know my time has expired. Thank you very much. Thank you all.

Mr. Bryce. Thank you, sir.

Mr. Rush. The gentleman yields back.

The chair now recognizes Mr. Pallone, the full committee chairman, for 5 minutes for the purposes of asking questions.

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[11:07 a.m.]

The Chairman. Thank you, Chairman Rush. As we have heard, the ongoing COVID-19 -- excuse me. I will just turn my phone off here. We have heard over and over again that the ongoing COVID-19 pandemic has led to an increasing number of unpaid electricity bills, and some utilities are reporting more than 20 percent of their customers are falling behind.

Recent figures estimate there will be between \$19 and \$25 billion in unpaid electricity bills by the end of the year. So let me ask Ms. Dreobl. In light of these mounting unpaid bills, what can be done to ensure that the system remains operational, and homeowners are not left in the dark? What more can the Federal Government do to be helpful.

Ms. Dreobl. Thank you for your question. I think the Federal Government can provide guidance on this issue. Right now, it is up to States to decide if they will have moratoriums in place to keep people's lights on. And as you stated, you know, as of today, only 21 States and the District of Columbia still have connection bans in place for electricity, gas, and water.

And as we move into the winter months, a lot of people are going to be in danger of losing their electricity. This is going to place a massive burden on families and will have wide ramifications for the economy as we work towards recovering from the public health crisis. I think more funding for LIHEAP could definitely help in the short term, and I think energy efficiency investments can also act as a long-term solution to help people afford their energy bills in the long term.

The Chairman. Well, as I mentioned earlier, the House is expected to debate

today an updated version of the HEROES Act, and that provides an additional \$4.5 billion for LIHEAP. It includes a moratorium on energy and water shutoffs.

You know, let me ask. Let me go back to you, Ms. Drehobl, and I will ask Dr. Reames. You know, in light of these mounting unpaid electricity bills, I mean, would you say that this is a good thing to do, that we need these shutoff moratoriums and this additional funding for LIHEAP?

Let me start with you, and then I will go to Dr. Reames.

Ms. Drehobl. I would say definitely, we do. We definitely need more support to help people keep their lights on as we move into the winter months and as the pandemic continues.

The Chairman. And then, Dr. Reames, in light of these mounting unpaid electricity bills, what do we do to ensure that lights stay on for vulnerable communities and that system has enough resources to remain operational?

So on the one hand, you know, do you support what we are doing in this updated HEROES Act with additional LIHEAP money and a moratorium on energy and water shutoffs? But at the same time, what do you think we should be doing to make sure that there are enough resources in the industry to remain operational? I will ask you both things.

Mr. Reames. Yes. Thank you for that. I do think the additional funds for LIHEAP are definitely very important. I think this also allows us a time for there to be greater coordination between this idea of the long-term strategies of weatherization and the short-term benefits of LIHEAP. It is also a time to discuss with utilities and State regulatory bodies on, one, how we are tracking this mounting debt that people are having, what parts of the community are experiencing this at greater proportions, and then to think about long-term strategies to reduce energy burdens and energy debt.

That needs to be a really [inaudible] conversation about, you know. What do we do on the other side of this pandemic with all the debt that people are accumulating and may not be in an economic position to pay, and then how can LIHEAP be distributed more effectively to pay off some of that debt.

The Chairman. I mean, I really believe that without the moratorium on shutoffs, because there are just too many people that will be shut off and won't have power, won't have water, et cetera, and obviously, you both agree with that. But I also think in addition to helping people with the LIHEAP, we have to figure out how the system remains operational, and I think that probably means some kind of Federal assistance as well.

But, again, I am going to reiterate that, you know, this is an updated bill that the House is going to pass, but the most important thing is that we get Leader McConnell and President Trump to come to a consensus bill that we can pass, you know, in the next few weeks, and hopefully we are moving in that direction.

So I thank you both, and I yield back, Chairman Rush.

Mr. Rush. The chair yields back.

The chair now recognizes the ranking member of the full committee, Mr. Walden, for 5 minutes.

Mr. Walden. Well, thank you very much, Mr. Chairman, and thanks again to all our witnesses. Your testimony has been most helpful.

It is unfortunate that the HEROES Act 1 and HEROES Act 2, Republicans were completely excluded from the discussions on this. When we did do the CARES Act, we were involved, and those bills passed nearly unanimously, I think, and we came together as a country and as two parties with different views to stand up and work for the American people.

Sadly, in both of these initiatives, HEROES 1, HEROES 2, it is just a proffer for the Senate, and we have not been included in those discussions. It is a one-way communication strategy that is doomed to fail unless things change. It didn't have to be that way.

I would like to enter into the record two recent advocacy ads in the Los Angeles Times, one from the Sierra Club and another in response by the United Latinos Vote, a low-income advocacy group in California. The reaction to the Sierra Club ad pushing for gas bans and electric vehicles underscores the poor and working class concerns about California policy very well. I would encourage members to read this.

Mr. Chairman, without objection, I would ask that those be entered into the record.

Mr. Rush. So ordered. So ordered.

[The information follows:]

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Mr. Walden. Thank you, sir.

Mr. Bryce, you raise a point that I think we should all bear in mind, and that is transitioning to clean energy carries costs that are not always discussed thoroughly to the people that have to pay those costs. And we have talked today about affordability, especially during the pandemic.

You enlightened us about what is happening in Germany, what is happening in other States. Oregon is a big renewable energy State with hydroelectricity. My district has thousands of megawatts of wind energy generation capacity as well as big solar fields and great potential for geothermal.

Last week, California's governor, though, called to eliminate sales in the State of light duty gasoline-powered vehicles. In your analysis, what impact will that have on communities that benefit from the ban on gas-fueled vehicles? Is this going to hurt low income communities?

Mr. Bryce. I think there is simply no doubt, sir, that this ban on internal combustion engines which, in my view, is remarkable after the auto cycle engine was designed in the 1880s. It has been over the past 140 years continually improved. The technology has gotten cleaner. The power density has increased, and gasoline prices have been flat for over 40 years, according to the EIA.

The fact is, sir, and I was at Costco the other day. There was a Chevy Volt out in front, a brand new electric vehicle. The sticker price was \$46,000.

Mr. Walden. Right.

Mr. Bryce. Tradesmen, the working class Americans, working class Californians are not going to be able to afford electric vehicles. And that was some of the -- the United Latino vote made this point. Assemblyman Jim Cooper in California has made

this point, that these alternative fuel vehicles are simply out of reach for most Americans, and it is unfortunate, and I think it is a misguided policy.

Mr. Walden. Well, and I know -- I think you mentioned rolling blackouts and capacity issues on the grid in California with the existing system. I believe that it was energy from Snake River dams in the northwest, 50,000 megawatt hours, a 25 percent output increase ship power to California that kept the lights on.

Many of these same groups that are pushing these policies also want to pull out those dams and eliminate that carbon-free hydro power. What impact does that have, do you think, if that happens?

Mr. Bryce. Well, sir, I am no expert on the hydropower politics and the situation in the northeast. I will answer the question, maybe, that I think is more critical to the low carbon electricity grid nationally is the ongoing shutdown of nuclear power plants. We have seen that at the Indian Point nuclear plant in New York. I am not a partisan. I am not a Democrat. I am not a Republican. But the Democratic States -- in New York, they are closing Indian Point. The San Onofre nuclear plant in California has been closed. They are closing Diablo Canyon.

Exelon just announced they are going to close two nuclear power plants in Illinois. This is the wrong direction to be going if we are serious about pursuing low and no carbon electricity.

Mr. Walden. Mr. Bryce, I have had people tell me that we should stop talking about the need for firm baseload power, that that is unnecessary in today's marketplace, and it is a complete red herring. Do you agree with that?

Mr. Bryce. I do not.

Mr. Walden. Why?

Mr. Bryce. Well, we live in an as-needed electric grid, not an as-wanted grid.

You know, solar and wind energy are growing. They are getting very significant subsidies, but these are intermittent sources of energy. You can't count on them, and that was what we learned just most recently in California.

So the cost -- as the University of Chicago study showed, the cost of making intermittent electricity sources firm is large because you need that standby generation or potentially in the future very large batteries. Well, consumers are going to have to pay the cost of all of those.

So baseload electricity, the idea that these plants aren't needed anymore, is simply not true.

Mr. Walden. All right. I have used up my time, Mr. Chairman. You have been most generous.

Thank you again to all our witnesses as we work on these important issues, and I yield back.

Mr. Bryce. Thank you, sir.

Mr. Rush. The gentleman yields back.

The chair now recognizes the gentleman from California, Mr. Peters, for 5 minutes.

Mr. Peters. Well, thank you, Mr. Rush. And I guess since I am the first Californian called on, I just have to respond briefly to my colleagues who criticize my State's effort to lead the country, and frankly, lead the world in climate action. We might agree on some land use policies that California could improve on, and I am sympathetic to baseload power, but when my colleagues cite increased costs of action, they pretend that there are no costs to inaction which we all know is false.

Climate change is going to be expensive, but it is going to be a lot less expensive if we act now. So I am willing to discuss whether what California is doing makes sense

because we are running the first experiments, and we are going to make mistakes. But acting now on climate is not an example -- it is not a mistake; it is an example;

Now, to today's topic. We have heard our witnesses talk about the importance of targeted policies like energy efficiency requirements in buildings and appliances, investments in community-based energy efficiency assistance programs. We have also heard that policymakers need to do more to ensure policies that incentivize clean energy technologies.

I just want to say that the big picture here is that because these disadvantaged communities are disproportionately harmed by the effects of climate change, everything we do to reduce the rate of climate change helps these communities the most, and that is the urgency. I think that is the important frame to keep in mind here as we talk about what to do, because generally, action would be helpful.

And we didn't talk about it today, but I wanted to talk about another topic that I raised before which is the price on carbon. A 2017 DOE energy report showed that continued investments in clean energy technologies, coupled with the price of carbon, will cut CO2 emissions faster than the sum of each approach on its own.

But I also want to talk about in this context how important it is that the price of carbon be designed to offset the energy burden on low income housing, on low income households. And I call your attention to a 2018 CRS study that was prepared by Joseph Rosenberg of Columbia that assessed the household impact of a \$50 per ton metric -- \$50 per metric ton carbon tax that was designed with a per capita household rebate that generated for the lowest income quintile a 4 percent increase in household income in 2025.

I think it is very important to combine these kinds of technologies in terms of private investment with public investment and send that incentive to the private sector to

do the right thing and to make investments. But we have to design these things with these disadvantaged communities in mind, and I think we can do that.

I wanted to ask Ms. Drehobl a question about something you said. Can you elaborate on how incentives for home energy efficiency improvements can aid in reducing carbon emission by what I think you said in your testimony was 60 million tons? That seems like a benefit not just to these households but to the whole effort nationally to fight climate change.

Ms. Drehobl. Yes. Thank you for your question. Reducing household energy use not only helps reduce burdens on individual homeowners who are paying those bills, but it also reduces the amount of pollution generated from carbon polluting at facilities which improves public health overall and has multiple benefits for communities as well as job benefits which I think are really important right now as we work to rebuild the economy.

So from a climate change perspective, energy efficiency and modernization update creates not only impact inter air quality and health but also helps with climate change overall.

Mr. Peters. Thank you.

Dr. Reames, I believe it was you, and it might have been someone else, and so they can chime in as well. I wanted to talk a little bit about energy efficient products like light bulbs and why they are more expensive and not affordable in areas of high poverty.

Can you explain that to me and talk a little bit also about what incentives or aid do you think Congress should provide or could provide to help low income communities transition to affordable clean energy to combat the climate crisis?

Mr. Reames. Yes. Thank you for your question. We did a study in Detroit looking at store prices of light bulbs. And what we found in poor communities, because

of the type of stores that are there and the partnerships that stores have with utilities, that most of the rebates were in big box stores which we know are located in the suburbs and not in urban core.

And the stores also did not carry the most efficient appliances either because they, you know, can't afford to stock them, or that is just not a part of their inventory.

And so in places, particularly where transportation access is low and people go to local stores in those communities, they will not have access to either the most efficient technology or the most affordable technology. And so offering rebates from a Federal level that also targets those communities would help those communities with access.

Mr. Peters. My time has expired, Mr. Chairman. Thank you for the hearing, and I yield back.

Mr. Rush. The gentleman yields back. The chair now recognizes Mr. Latta for 5 minutes.

Mr. Latta.

Mr. Latta. Here we go.

Well, thanks, Mr. Chairman, and thanks to our witnesses for appearing before us today.

Over the past few months, the American people have been hard hit by the outbreak of COVID-19. Many have lost their jobs and are finding it difficult to continue to pay their bills. We have also seen businesses and manufacturing plants shut down or curtail production which have caused ripple effects across the greater economy. For years, our country has been trying to bring back more manufacturing jobs lost to China, Mexico, and other countries, and COVID-19 has only made the effort more difficult.

Given all of this, the last thing that working families and businesses need to see is rising electric bills. Unfortunately, if we were to adopt the energy mandates like those

in the Green New Deal, that is exactly what would happen.

My district in northwest and west central Ohio is home to over 60,000 manufacturing jobs. Thankfully, in part due to the policies implemented by the Trump administration and the American energy renaissance, I believe we are seeing growth in the manufacturing sector. I have been told by model businesses in Ohio that one of the reasons for this is reduced cost of energy.

Companies small, medium, and large, want to pay Americans what they deserve in these manufacturing jobs, and they have found they can do so by saving on energy and operating costs. They can also, in turn, bring these jobs home, build up the local tax base, and inject more money into our local towns and economies.

Mr. Bryce, if I could ask, start with you. In your testimony, you point out that imposing arbitrary energy mandates would actually increase the cost of the electricity to rate payers. Wouldn't companies be dissuaded from bringing back manufacturing jobs if they are forced to pay higher electricity costs?

Mr. Bryce. Well, I think, yes -- sir. Mr. Latta, I think that the answer is yes. And I think that it is clear that what we have seen, thanks to the shale revolution, since 2005, the U.S. has seen the biggest increase in energy production in world history. The scale of the increase in U.S. oil and gas is truly unprecedented, and that has resulted in a big surge in manufacturing jobs in the United States, in particular, due to lower cost natural gas, but electricity figures into that as well.

I think it was last year the Council on Economic Advisors released a report that said that the shale revolution has saved American consumers something on the order of \$200 billion a year, and most of those savings are occurring because of lower cost electricity, and that is a knock on effect on the fact that we are using more low cost natural gas to generate power.

So all of these things are connected, but yes, I think there is just simply no doubt the industrial base in the U.S. has benefitted greatly from this increase in domestic oil and gas production.

Mr. Latta. Well, if I can continue with another question for you because the ranking Republican member from Oregon brought this up when you were talking about baseload capacity and also volume peaking. And the real question is, really, if you could go into more details on the impact on manufacturing plants since they would be -- you know, you would also be required to use the renewable mandates and maintain that baseload capacity, those differences there.

Because, again, you know, I talked to some companies out there, again, in my district, and I have got a lot of companies that use a lot of electricity. But, you know, what would be those differences in cost out there?

The other would be that you wouldn't even have that ability if you didn't have that baseload to have that company there because we have got to rely on the baseload to turn the factory on in the morning.

Mr. Bryce. Well, sir, I am not exactly sure how to answer your question, but I will answer it this way, that what I know and from talking with people that I know, investors here in Texas that put money into plants, for instance, in Mexico. They have built an electric plant near an auto plant near Monterey, and the electric load there is enormous because of the heavily -- they use a lot of robotics.

So I think as manufacturing becomes more automated, not only is electricity supply more important, but electricity reliability is more important.

So these are key issues and key challenges because we have a very diffuse ownership of the grid in the United States, incredibly diffuse, partly as a result of the new deal where we have about 800, 900 different electric cooperatives, we have a lot of

investor-owned utilities, locally owned utilities. They all have to coordinate. But the key here is reliability and low cost, and those are the key challenges that I think that the United States is facing now in trying to talk about going to cleaner energy and power systems is how is all of this going to be coordinated while assuring lower prices and reliability?

Mr. Latta. Well, thank you very much, Mr. Chairman. My time is about to expire, and I yield back.

Thank you very much.

Mr. Bryce. Thank you.

Mr. Rush. The gentleman yields back.

The chair now recognizes Mr. Doyle for 5 minutes.

The chair now recognizes Mr. Doyle for 5 minutes.

Mr. Doyle. Thank you, Mr. Chairman and Ranking Member Upton, for holding this hearing, and thank you to the witnesses for being online with us.

It is a disgrace that so many people in this country have energy bills they can't afford. We have to attack this issue aggressively so that no families have to choose between food or electricity or face having their power shut off because they can't make a payment. It is clear that we must invest in solutions like weatherizing homes and deploying cheap, clean energy systems, and right now is the time for us to be making those investments.

We have the technical capability, we have many people looking for good-paying jobs that can be done safely, and the government currently can borrow money basically interest free. Making the right investments now can help people afford their bills, provide a cleaner future, and help dig us out of this economic hole created by the pandemic.

I also believe that as we figure out how to make these investments, we must provide people from low income and particularly minority communities with access to the education and training they need to get good-paying jobs in the construction and rehabilitation industry for the clean energy industry.

We must also make sure we are not leaving behind communities who have lost fossil fuel jobs as they are also struggling and have a skilled workforce that can be deployed to build and run clean energy systems.

I would like to start by asking Ms. Drehabl. Can you please expand on how helpful to advancing clean energy systems it would be to allow the weatherization assistance program to also cover the cost of things like roof repairs so solar could be installed or having an attic insulated?

Ms. Drehabl. Sure. Thank you for your question.

Often, households who are eligible for weatherization have health and safety issues or things that need to be repaired before they are able to participate in the program, including additional funding to cover some of those costs such as roof repairs, such as addressing mold or other issues can help many more households be able to access the benefits of these programs.

So that was one of our recommendations was including more funding for health and safety repairs within the weatherization program.

Mr. Doyle. Thank you.

Ms. Wyatt, a large percentage of households that face high energy costs, these people live in multi-family homes or they are renters. The challenge, it seems, is incentivizing landlords to install clean energy systems since they don't live in the home or pay utilities.

So how effective would making the solar or solar plus storage investment tax

credits refundable or providing direct pay for be in getting these landlords to install these systems? And how do we design such a system so that we don't end up simply giving wealthy landlords a larger tax write off for all their properties?

Ms. Wyatt. Thank you very much for your question. You are absolutely right to flag the incentive structure difficulties with making sure that residents of multi-family housing, including affordable housing, can receive the benefits of clean energy and that the owners of that housing who are often non-profit entities are incentivized to go solar even if they are not necessarily the ones paying the energy bills.

Different programs have been pioneered around the country, including solar and multi-family affordable housing in California, with which GRID Alternatives co-administers. The ITC making that -- the Federal investment tax credit making that refundable for non-profits would, again, enable non-profits, including affordable housing providers, to directly access the benefits of that incentive for installing clean energy systems.

And, you know, in terms of tax write-offs for -- you know, who gets the benefit of the clean energy? One of the strategies that we found useful, it pioneered in California which, of course, has done a lot of experimenting on clean energy policy and how to make it more equitable is, you know, requiring the beneficiaries of clean energy incentives that are multi-family housing owners and providers to pass on those benefits in tangible ways, either in bill savings if the energy bills are structured that way, or other tangible benefits like maybe they get better internet service or other services for residents.

Mr. Doyle. I see. Mr. Chairman, I see my time is about to expire, so I will yield back.

Mr. Rush. The gentleman yields back.

The chair understands that Mrs. McMorris Rodgers is not available, so the chairman will recognize Mr. Olson for 5 minutes.

Mr. Olson. I thank my good friend from the south side of Chicago, Chairman Bobby Rush. My friend, I am compelled to apologize in advance. If your White Sox beat Mr. McNerney's Oakland As today, my Houston Astros have bats and brooms. There is going to be a big, old sweep in the baseball world.

Mr. Rush. I choose not to respond to wishful thinking.

Mr. Olson. Wonderful witnesses. A special howdy to a Texas Longhorn, Robert Bryce, who knows what six words come after four quick claps; deep in the heart of Texas.

I have a few questions for you, Mr. Bryce. Like all Texans, you understand that we have the best and most competitive electric market in the Nation. It is a free market with competition. That means lower prices for consumers. We lead the Nation in renewables, number one in wind, number four in solar.

In your testimony, you mentioned that California has, quote, "big mandates with big prices," end quote. Do you mind discussing how the Texas competitive market keeps prices so low while we lead the way in renewables and how California, with their hard push for green energy without the means to achieve that, is going to pay such a high price for electricity now and in the future?

Mr. Bryce. Well, thank you, sir. I did graduate from the UT a long time ago, but I am still from Oklahoma, so I still -- you know, I still root for the Sooners, so just got a full disclosure here. Nevertheless --

Mr. Olson. Sorry to hear that.

Mr. Bryce. Nevertheless, sir, there is a contrast, a big contrast, between what we see in California and what we see in Texas. Texas has had a much lighter hand in terms of regulation. You saw Governor Gavin Newsom announcing that he wanted to

ban hydraulic fracturing in California despite the fact that hydraulic fracturing has led to this renaissance in the U.S. oil and gas business that has saved every consumer in this country an enormous amount of money.

So as far as the details of the electric markets, those are complex. They are very complicated markets. But Texas has been successful, but I will -- in terms of how it has structured its market, California, I was interested in Mr. Peters admitting that there had been mistakes in California, but there have been 20 years of mistakes that have not been corrected.

So what we have seen in Texas, I think more than anything, is that the State has, and particularly the electricity consumers, have benefitted due to low cost natural gas.

Remember, it was about in the mid 2000s the average price of gas in the-- natural gas in the United States was as high as \$7 or \$8 on an annual basis. And now we are at \$2 and change. This is a remarkable reduction, and that reduction is saving consumers not just in electricity but in home heating.

In industry, we see the increased investment in foreign direct investment in chemical plants, petrochemicals along the Gulf Coast. These are massive investments that are benefitting American workers and the American consumers.

Mr. Olson. You mentioned natural gas. As you know, America now is awash in natural gas. We are exporting liquified natural gas. It is the cleanest, most versatile, and cheapest source of energy for power.

You also mentioned that three local governments in California have passed bans or restrictions on the use of natural gas in buildings. You point out that these are being done in the name of climate change and decarbonization, but they are, in practice, a form of energy taxation that many of these people can't afford.

I think that is a factor why SpaceX moved to Austin, why Toyota moved their

North American headquarters to Plano, and why 90,000 Californians moved to Texas in 2018. Can you elaborate on this phenomena about banning natural gas for buildings?

Mr. Bryce. Well, I understand the sentiment. What I think is remarkable, though, is when you look at the residential sector in terms of natural gas use in the United States, consumption in that sector has been effectively flat for 50 years at about 5 trillion cubic feet per year. And California, I think, if memory serves, has a higher percentage of homes, has I think about 80 percent of homes in California are connected to the natural gas grid.

So even the California Public Advocates Office has issued a report talking about the regressive effects of banning natural gas, and particularly for renters and for low income households, that if they are forced to give up the direct use of natural gas, they will have to use electricity instead.

And, further, that as the number of customers that are connected to the gas grid declines, the cost of maintaining that grid will then be spread over fewer and fewer customers, and that, again, is a regressive, a knock on effect of these bans.

So it is interesting. I mean, even the Public Advocates Office has been looking at this and recognizing the potential economic impacts of those bans.

Mr. Olson. Thank you. I am out of time.

This is to you, Mr. Bryce, and Markwayne Mullin. Horns up and beat OU. Hook 'em, Horns. October 10. I yield back.

Mr. Rush. The gentleman yields back.

The chair understands that Mr. Sarbanes is presently not present, so the chair now recognizes Mr. McNerney for 5 minutes.

Mr. McNerney. Well, I thank the chairman, and I can't help but admire Mr. Olson's undying enthusiasm for Texas and that, but I get a little tired of hearing such

bashing of California from all these folks.

In particular, criticisms of our energy policies and blaming rolling blackouts on those policies. But inaction on climate is already hurting low income communities more than any energy policies.

Blackouts are caused by extreme heat from climate change, and wildfires are related to that, impacting everyone, but especially low income communities.

Dr. Reames, thank you for your testimony this morning. I also hear Members from the other side claiming that clean energy will rise electricity rates. However, a recent study from UC Berkeley showed definitively that the cost of wind, solar, and storage are decreasing so quickly that the U.S. can reach 90 percent of clean energy by 2035 without raising customer cost and may actually decrease wholesale price by 10 percent.

Please discuss the decreasing cost of clean energy, the relatively high cost of fossil fuel generation, and the expensive cost and consequences of climate change and the short-sighted claim that clean energy costs more.

Dr. Reames.

Mr. Reames. Thank you for your question.

I think it was mentioned by Chairman Rush in his opening statement that nearly half of the rooftop solar potential rests upon the rooftops of low and moderate income households when it comes to solar. And so this idea that solar is available, the potential is there, and the costs are going down makes it more economical to begin to think about strategy to expand rooftop solar access to low and moderate income households.

In addition, if we look at some of the inconsistencies or the burdens on the costs for residential electricity has raised substantially for the residential class customer going far beyond that for commercial and industrial customers over time. And so this idea of

equity versus equality, the focus on equity would look at rates for residential customers.

It was mentioned that if we move away from natural gas that the cost of that infrastructure will be borne on residential customers. But if we actually focus on electrifying the residential sector, we could look at equity and pricing for the commercial and industrial sector.

We also know that poor communities who have high energy burdens are also bearing the cost of the pollution that is related to our fossil fuel energy generation.

And so, again, higher income households and communities that do not have generating plants are using more energy, but the cost of the energy and the pollution is borne by low and moderate income communities and communities of color.

Mr. McNerney. Thank you, Dr. Reames.

Ms. Wyatt, as you noted in your testimony, one way Congress can address the economic impacts of the pandemic is through the expansion of job training and grant programs, particularly with those focused on clean energy, especially in low income and underserved communities. While the energy sector saw incredible job growth over the past decade, the distribution of that growth hasn't been equitable. Specifically, the inclusion of women and Black Americans remains a challenge.

Can you speak more to what can be done to ensure that those historically underrepresented groups are not overlooked as clean energy jobs are created?

Ms. Wyatt. Absolutely. And thank you for your important question, Congressman.

Clean energy industries do need to look more like the country. And while they are making some worthwhile efforts on that front, we have several policy recommendations on how to boost inclusion in the industry.

Many clean energy industry jobs can be made to have particularly low barriers to

entry and strong career paths if the barriers to employment are reduced and the career paths are targeted and made accessible to every community through policy actions and investments.

We also recommend, you know, support for clean energy entrepreneurship in communities of color as well. Most solar companies, for example, are quite small, and it is an industry that can and should have a lot more CEOs and executives of color, people at all levels and all rules.

So workforce development programs should emphasize clean energy, and clergy energy programs should emphasize workforce development, two sides of the same coin.

GRID has seen the success of this sort of approach. One example is our Solar Works DC program in the District of Columbia that gets local residents paid training for solar careers. Paid training is important to enable more participation. We also have women and solar in troops to solar program, SolarCorps.

There are lots of ways to reach out and be inclusive in workforce development training.

Mr. McNerney. Well, thank you for that answer.

I thank all the witnesses today, and I thank the chairman.

I yield back.

Mr. Rush. The gentleman yields back.

The chair now recognizes Mr. McKinley of West Virginia.

Mr. McKinley, you are recognized for 5 minutes.

Mr. McKinley. Thank you, my friend. I am going to direct my questions back to Mr. Bryce, but before I do that, Chairman Rush, I would like to ask you if I could get some help, maybe from your staff, because in some of your opening remarks in the preparation for this document that talked about the impact coal has had on low income families and

communities of color.

And I respect that, but I am also saying this as an observation, that when I came here in 2010, over 52 percent of the power plants in America or the generating plants came from coal. There were 700 coal-fired power plants. Now we are down to 25, 25 percent, and we only have just over 200 coal-fired power plants.

But what I am not seeing is any measurable decrease whatsoever in asthma, in lung disease, cardiovascular disease. I am asking can someone show me that doing away with coal actually improves the health of all of these communities.

Now, one thing that actually has happened, Chairman Rush, has been in West Virginia. We have seen nearly a 70 percent increase in our utility bills, and we are the second lowest income in this country.

So when all of you are talking about concern about low income communities, what about low income States that you just impacted by doing this?

So I would like to hear from your staff if they will get back to me.

But let me go to Mr. Bryce, if I could, because I have got a series of math issues that I am concerned about, and that is one starting with the weatherization program. I have been very supportive of it and will continue to work with Peter Welch and others to continue this.

But I am looking at the numbers, that we are spending about \$300 million, Mr. Bryce, \$300 million into the weatherization program, and we are doing -- just a couple years ago we were doing 60,000. Last year we did only 35,000 homes, but let's use that 60,000 homes as the number, 60,000 homes we are fixing.

The average savings, according to the Department of Energy, is around \$300. So as a result, we are spending \$18 million out of \$300 million. I wonder, maybe, is there sense in it because if we just wrote them a check, these constituents, a \$300 check,

wouldn't that be beneficial?

Or maybe what we could do is, Mr. Bryce, would you say, what if you gave more families? Because instead of just limiting it to 60 -- 60,000, what if we went to 10 times that, to 600,000 families? We can afford to do that. Just write them a check for \$300 because that is the savings that we are spending.

So I am wondering. Or Mr. Bryce, would you say, should we do research into more weatherization so that the savings that we get is more than \$300. Should we save \$1,000? Should we save \$1,200? Would that be a better use of our money rather than doing the simple weatherization we are doing because we are only saving \$18 million out of \$300 million being spent.

Or should we switch to energy performance contracts and not have to spend any money because energy performance contracts across the country, there is no expense on that. The Federal Government doesn't have to put out anything. We don't have to put \$300,000 out. Individual companies would do that.

So I am just curious, Mr. Bryce, either one of those three: Give more families money, increase our research into weatherization, or what about switching to performance contracts? What say you on that?

Mr. Bryce. Mr. McKinley, I am going to be honest with you. I don't know those programs, and I would be -- it would not be my place to comment on them because I simply don't know those numbers, and I am not familiar with the program.

So I appreciate the question.

Mr. McKinley. Well, I appreciate that, and I am jamming you a little bit on it, but what I am saying, Mr. Bryce, is that if we are only saving -- if the energy savings is only \$18 million, but we are spending \$300 million to do that, what if we just wrote them a check? What if we just wrote a check, and then we don't -- then we could save \$280

million.

Mr. Bryce. Well, yes, sir. I understand your point, but I think those savings would accrue over many years, and so, you know, I am in favor of efficiency. I replaced my refrigerator this year, and it uses a third as much electricity as my old refrigerator. So I have seen personally the benefits of efficiency.

But, again, as far as the specific programs and the math that you are putting forward, I can't tell you any -- I can't add anything to what you have said.

Mr. McKinley. I am just wondering whether or not -- I would love to see more efficiency with it. I agree with you on that.

But, again, at \$300 million to get 18, what if we gave more people that are hurting, that are struggling out there, the low income families, let's help more of them than just 30,000. What if we had 60, 100, or 200,000? Let's do something that has an impact, not this program. It needs to be updated significantly.

So I thank you, and Mr. Chairman, I do hope to hear back from your staff. Thank you.

Mr. Rush. I want to thank the gentleman.

The gentleman yields back.

I just wanted to let the gentleman know, you know, it is not my intention, nor has it ever been, to engage in any kind of false dichotomy between poor people who reside in West Virginia and poor people who reside on the south side of Chicago.

I think that that feeds into an unfortunate narrative that has really created so many divisions in our Nation.

I am for and have been advocating for the poor people in West Virginia just as I am an advocate for the poor people on south side of Chicago.

And that said, I fully intend to engage the gentleman with staff and any other

means in a meaningful, productive conversation in the future, and I thank the gentleman for his open invitation.

Mr. McKinley. I look forward to it. Take care Mr. Chairman.

Mr. Rush. And with that, I yield 5 minutes to the gentleman from Maryland, Mr. Sarbanes, who has returned.

You are recognized for 5 minutes.

Mr. Sarbanes. Thank you very much, Chairman Rush, and thank you for the hearing today.

I wanted to speak to a project in Baltimore city that I am very proud of that is trying to lift up communities that have been under a lot of pressure, particularly recently. It is a program called the Baltimore Shines program. It helps increase access to solar energy by installing solar panels in underserved communities.

What the City of Baltimore does is it couples that work under the weatherization assistance program, the work that they do there, with the solar initiative, so they go in, and they do all these things at the same time.

It has a workforce component that trains local individuals for jobs in the solar sector which can be very good jobs, high quality of life there if you can get one of those jobs.

And I am glad to see the GRID Alternatives, one of the witnesses here today. They were an early partner in the Baltimore Shines project, the pilot project that then became Baltimore Shines along with the Department of Energy, the U.S. Department of Energy a few years back, Morgan State University, and others which provided over 30 homes in that area of Baltimore with solar systems.

Ms. Wyatt, I know that your testimony has touched on previous projects that GRID Alternatives implemented. You understand the value of decreasing barriers and

increasing access to solar energy for low income and underserved communities, and you mentioned the need to build trust there with community members.

Can you explain some of the benefits of working with community leaders and local officials on these projects as GRID Alternatives did in the Baltimore solar initiative, and how can Federal programs help to foster and support these partnerships?

Ms. Wyatt. Thank you for your questions and your kind remarks about GRID Alternatives' work in Baltimore, Congressman. We are very proud of the combination of solar savings, weatherization, and workforce development that has helped so many Baltimore families.

As you say, trust with community members is crucial. Honestly, sometimes the immense benefits of solar can seem too good to be true in some of the communities that, frankly, have been targeted for scams, low income communities and communities of color, have been exploited and are often on guard when they hear we can cut your energy bills in half. It sounds too good to be true.

There is also, you know, again, the barriers relating to just not seeing solar and clean energy as the sort of thing that is for me. Cultural barriers, educational barriers, language barriers, of course, in some communities.

And so working directly in partnership with community members and local officials could really bridge gaps and also, you know, help shape the program in ways that make it actually responsive to community needs so that you are not just dropping down in a top down manner and imposing solutions on communities.

Letting the communities, again, lead the solutions is very important, and, you know, giving them tools to hold officials and programs accountable for how well they are doing.

Some ways to, you know, try to accomplish that, you can enhance participation in

the design phase through, you know, steps to recognize the barriers that communities face like even just needing childcare and working day jobs and participating in program design. You can give capacity-enhancing assistance to community-based organizations to help them interact with the decisionmakers and the program administrators.

The key is deliberate effort and deliberate outreach.

Mr. Sarbanes. Thanks very much. I appreciate that response.

And I think what you are saying is all of these different initiatives that we are speaking about today have the opportunity to be empowering for the communities in which they are deployed. And building that partnership, creating the opportunity for input on the front end, I mean, obviously groups like yours bring expertise, but you don't have expertise about what a particular community's perspective has been, its history has been, the resources it can put together, the pipeline it can create.

So you have to be very -- bring humility to that, and it seems like when that happens, you get the best results. Again, I want to thank you for your efforts in Baltimore. We are going to continue to try to be as innovative there as we possibly can.

With that, Mr. Chairman, I yield back.

Mr. Rush. The gentleman yields back.

The chair now recognizes the gentleman from the great State of Virginia, Mr. Griffith, for 5 minutes.

Mr. Griffith. Well, Mr. Chairman, I want to take a little bit of time for a point of personal privilege, just as you did. I have served with you now for 10 years on the Energy and Commerce Committee. This morning, Mr. Doyle was at another meeting where he said we have got to stop thinking just because we disagree that the other side is evil. I agree with that, and I can say as an affirmative to your comments to Mr. McKinley that in the entire time I have been here, we have not always agreed on how to

accomplish it, but you have always advocated for poor people, whether they were from Appalachia or the south side of Chicago, and I appreciate that about you.

And even though we may disagree on how we solve these problems, I do greatly appreciate your leadership in that area and making it clear that this is not about one part of the country or another. It is about trying to help poor people across the board, and I thank you for that.

That being said, I will go to questioning Mr. Bryce, if I might. But thank you, Mr. Chairman, for that indulgence.

Mr. Rush. Thank you.

Mr. Griffith. Well, I do appreciate your leadership in that way.

Mr. Bryce, you point out in your testimony that between 2011 and 2019, California has seen the average price for electricity, industrial, commercial, and residential, increase by nearly 30 percent. That is more than seven times what we have seen throughout the rest of the country. I am particularly concerned with how California's renewable mandates have impacted consumers' electricity bills because the same public policies that have brought extremely high rates and rolling blackouts are now being pushed forward in Virginia.

In April, Virginia's governor signed the Virginia Clean Economy Act, requiring 100 percent carbon-free energy by 2050. Now, it is estimated by the largest provider in Virginia, Dominion Energy, that that will cause an increase -- and they put this in their report to the State Corporation Commission of Virginia. That will cause -- that mandate to build solar and wind generation capacity will increase rates for the average Virginia household roughly 45 percent or \$52.40 to \$55 per month or \$660 a year.

What advice do you have for the Commonwealth of Virginia if the priority is truly to provide affordable and reliable energy to all?

Mr. Bryce. Well, thank you, Mr. Griffith. My policy, or you know, I don't come -- I am not pushing any particular bill, particular policy. But for 10 years or more now in my books and the things that I have written, I am an advocate for natural gas and nuclear. These are the sources of energy that are low carbon, affordable, scalable. I think what is happening, particularly with the closure of nuclear plants across the country, is exactly the wrong direction.

And I think that, you know, there is no question that renewable capacity and renewable generation is growing and growing fairly dramatically. But what I see, and I think is going to clearly be a problem in Virginia, it is already a problem in Maryland with the Dans Mountain Wind Project.

But across the country in essentially every State, we are seeing conflicts over the siting of wind projects, the siting of utility scale solar, the siting of high voltage transmission. And I think if Virginia is going to push ahead with this mandate, which it appears they are, that these land use conflicts are going to be very much in the news, especially lower income counties.

What I see, in fact, in New York where the State has overridden the power of local zoning for local communities. There is a major project, the Alle-Catt wind project, that is being pushed on the counties of Allegheny and Cattaraugus. These are the fourth and fifth or fifth and sixth poorest counties by median household income in the State.

So if what is happening in other States happens in Virginia, you can count on the lowest income counties in Virginia being targeted for these large scale projects because the local communities don't have the kind of resources to fight them in court.

Mr. Griffith. Well, in representing a congressional district that ranks 422nd on median household income of the 435 in Congress, that is of some concern, although we would welcome the jobs in many types of energy production. We currently have a lot of

coal and natural gas, but we would -- we welcome a lot of energy because it is a field that we know.

But I do think it is interesting. You also mentioned that you were in favor of efficiency, and I was curious about the California electric car situation because as I have interpreted that or listened to that, they are only going to ban the sale of new cars, new gas-powered cars.

And so I know exactly what happens in communities that don't have money, and that is they will continue to drive those gas-powered cars. They will figure out a way to keep them on the road, fix them up when they might otherwise trade them in. Doesn't that create for less efficiency instead of more efficiency?

Mr. Bryce. Well, I certainly see your point, and I think you can clearly argue that. I think what is clear is that the automotive fleet is getting more efficient. That is a very positive thing, but you know, electric vehicle sales still account for a very small fraction of overall vehicle sales. And numerous studies have found that it is the very wealthy households are the ones that are buying these vehicles, not working class, and so I -- and not working class households.

So I think there is definitely -- as Dr. Reames has pointed out over and over, there are issues of equity here. And Assemblyman Jim Cooper wrote an open letter to the big environmental groups in California about this very issue of equity when it comes to subsidies and mandates around electric vehicles. Transportation is essential, especially for working class people.

Mr. Griffith. Let me claim back my time because I only have a couple seconds left.

Mr. Bryce. Sure.

Mr. Griffith. I do want to recognize the community housing partners that not

only do weatherization. They are headquartered in my district, and they do a lot of great work training other people on how to weatherize homes, and that is something that is important. And I think that Mr. Rush and I would agree -- Chairman Rush and I would agree, and I yield back.

Mr. Rush. The chair does agree. The gentleman yields back.

Now the chairman recognizes Mr. Tonko from New York for 5 minutes.

Mr. Tonko. Thank you.

Thank you to my friend, Chairman Rush, and just a couple of points for the record. While there was talk about incentives in the State of New York, let me also place on the record that my home State of New York has also passed significant incentives to keep our nuclear power plants in upstate continuing to operate.

And, also, when we talk about displacing some of these programs or replacing them with an outright check that would be drafted for consumers, we better be ready to pay that \$300 check each and every year because these are recurring benefits.

There is a tremendous need to center equity in our energy policy, and DOE's weatherization assistance program is an important part of this effort as the largest Federal program focused on delivering efficiency services to our low income households.

The weatherization program recognizes that low income Americans are paying much more of their paycheck for essential utility services, three times what higher income households pay as a percentage of their income. These families don't have the disposable income to make home improvements even when those cost-effective improvements pay back over time.

And we know the program works. Each weatherization program dollar delivers \$4.50 in benefits, including energy savings and improved health and safety. So homes that receive these services save on average \$283 every year, each and every year, on

their utility bills.

So, Ms. Drehabl. We know it is difficult to get rental and multi-family housing units to participate in the weatherization program. Many landlords don't see a reason to improve the efficiency of their tenants' homes, but obviously, many of us have a strong interest in ensuring these services reach everyone. Do you have any suggestions for how to increase these types of homes in the program, or how else might we incentivize weatherization services for these homes beyond the DOE program?

Ms. Drehabl. Sure. Thank you for your question. That is a major challenge. One of the recommendations that we included in our testimony is ways that the Federal Government can help target affordable multi-family housing which is a very large market of households. Right now, our [inaudible] occupied public housing, and we estimate that deep retrofits to 1 million of these units would cost about \$4.5 billion and lead to many, many benefits for those households and lower bills that are being subsidized by the Federal Government.

There is ways to work with public housing authorities and housing finance agencies to address this issue. That is one way that this could be done.

Mr. Tonko. Thank you very much. And the reauthorization bill that recently passed the House establishes a small, competitive grant program for innovative practices which could include community-based strategies; for example, a community's solar project to complement the weatherization of multiple homes in a neighborhood might be an offer.

Dr. Reames, what do you think about expanding this program beyond traditional services of lighting, windows, caulking, and insulation? And how might incorporating new technologies and strategies be a good modernization of the weatherization assistance program?

Mr. Reames. Thank you for your question, and I think you hit on a really important point. We noticed during our effort that there were some innovations in actually targeting weatherization to certain communities like I mentioned, the green impact zone in Kansas City. And that allowed for recognition that more than 50 percent of the homes are renter occupied, and so we realize that there needed to be a relationship with landlords, and that included some community-based social marketing, allowing landlords and renters to talk about the opportunity to weatherize the homes, and what that would mean for the tenant to be able to pay their rent and pay their utility bills.

And so this idea that homes are spatially located, built around the same time with the same building codes, really advocates or really pushes for this idea of community-based strategies that are place targeted.

RPTR MARTIN

EDTR SECKMAN

[12:08 p.m.]

Mr. Tonko. Thank you very much.

And, Ms. Drehabl, this innovation program is also intended to support pre-weatherization, work like roof repairs and mold remediation, as well as other complimentary practices. How might this type of work be complimentary to traditional weatherization services? And should improving the health and safety of homes also be a priority of the program?

Ms. Drehabl. Thank you for your question.

Yes, I would say that improving health and safety is really important to tie in with weatherization. There are a lot of additional benefits that come from improving indoor air quality and help with [inaudible] conditions such as asthma, comorbidities [inaudible] for children, et cetera, a lot of benefits that have been monetized by some States, as well such as the State of Massachusetts.

So I think being able to incorporate these estimates into the program is really important to access these additional benefits.

Mr. Tonko. Thank you very much.

Mr. Chair, I had a question for Ms. Wyatt, but I have run out of time and will get that to her so that she can respond within the given days after the hearing.

So thank you all for appearing before the subcommittee.

I yield back.

Mr. Rush. The gentleman yields back.

The chair now notices that Ms. McMorris Rodgers is available for questioning.

Ms. McMorris Rodgers, you are now recognized for 5 minutes.

Mrs. Rodgers. Thank you, Mr. Chairman.

I appreciate the subcommittee's focusing on increasing affordability and access to clean energy, a goal that we all share. I worry, though, that some of the proposals from the majority will have the opposite effect by raising cost on middle- and low-income families and decreasing access to reliable energy.

Recently, Governor Newsom said California is, quote, America fast forward, end quote. Even if unintentional, this is a warning about following California's failed policies. Nationalizing California's mandates for renewables, like wind and solar, at the expense of affordable reliable energy sources, like hydropower, nuclear, and natural gas, is a mistake. We have all seen the results of these mandates and sky high costs in California and recent rolling blackouts over the summer.

Wind and solar have a crucial role to play in our energy future, but we need to be realistic about their current limitations. And yet California is doubling down on costly regulations by mandating that cars sold in the State should be 100 percent electric by 2035. I am not sure how their grid will meet that demand when they can barely keep the lights on as it is.

Our goal should be to increase clean energy access and decrease energy costs for all Americans. But we can't do that by letting Governor Newsom's prediction come true.

Mr. Bryce, during California's energy shortage, they relied on imported energy sources to meet the demand that California's renewables were not able to make on their own. Specifically, they relied on 65,000 megawatt hours from BPA and the Federal Columbia River Power System.

Overall, despite being 16 percent of California's energy capacity, hydro was providing 33 percent of its energy at their peak. Hydro provides 70 percent of the power in my home State of Washington, which is why we have some of the lowest

electricity rates in the world. It is clean. It is reliable. And it should also be recognized as a renewable source of energy.

How does California's energy crisis this summer illustrate the need for policymakers, both at the State and the Federal level, to provide more flexibility on energy source mixes, not less, and how sources like hydropower can play an even more important role in increasing access and decreasing costs?

Mr. Bryce. Well, thank you, Ms. Rodgers.

I feel we are becoming the bash California show today, and that is not my purpose today. But I think to answer your question regarding hydropower directly, we are not building more dams in America, and the Northwest is blessed with enormous hydro resources, and that has been a great boon to the States in the Northwest.

I would answer your question by saying, again, that I think what -- I am a longtime advocate of nuclear energy, and I have testified before the Senate on several occasions making these very points. Natural gas and nuclear, if we want to continue decarbonizing our grid, those are the ways to go. I am not saying renewables aren't going to grow. They are. But the problem that we are facing in States all across the country, including in Washington, where the Benton Public Utility District just a few months ago said they don't want any wind added to their mix in the State of Washington, are these latest conflicts. And to me this is not necessarily about belief. It is fundamental math and physics. The power density of wind and solar are low, 1 watt per square meter for wind, 10 watts per square meter for solar. That is one reason why I think solar is going to continue to grow, the greater power density, but those don't even come close to the power densities of natural gas and nuclear, and that is key because land use matters, so --

Mrs. Rodgers. Okay. Thank you. Well, I appreciate that. I would also

highlight that only 3 percent of the dams in America actually produce electricity. So there is a huge amount of infrastructure that could be converted and utilized for new hydro moving forward, and hydro is still the largest renewable in America.

Mr. Bryce, on another topic, I wanted just to note in your testimony that you note that wealthy electric vehicle drivers in California have been directly subsidized through tax credits and other incentives at the expense of lower and middle income individuals. We have seen more indirect costs levied on American consumers by other policies, such as California's Zero Emission Vehicle Program, which forces manufacturers and dealers to sell EVs regardless of the demand.

And I see that I am out of time. I just think that this is also a very important point, and I will ask my question in a followup in a written question. But thank you for being here, and thanks for your insight.

Mr. Bryce. Yes, ma'am. Thank you.

Mrs. Rodgers. You are welcome. Okay.

Mr. Rush. The gentlelady yields back.

Mrs. Rodgers. I yield back.

Mr. Rush. The chair now recognizes the gentleman from Iowa, Mr. Loeb sack, for 5 minutes.

Mr. Loeb sack. Well, thank you, Chairman Rush, Ranking Member Upton, for holding this hearing today, and thank you to the witnesses who are joining us as well.

And I do want to acknowledge Mrs. McMorris Rodgers' emphasis on hydropower. I have enjoyed working with her on that while I have been on the committee. I think that is very important.

And as we are discussing today, the burden of energy costs is felt very differently by households across the country, and these disparities can depend on a number of

factors, including income level, race, regional location, as well as whether households are located in an urban or rural setting.

A significant number of my constituents in my Southeast Iowa district reside in rural communities where they generally face a higher energy burden, especially compared to their more urban counterparts. For example, according to the Department of Energy, in the metropolitan area of Iowa City, the average energy cost per household is around \$1,500 per year whereas in the rural small town of Farmington, Iowa, way down in the southeast corner of the State, the same average cost per household is nearly three times higher at just under \$4,400 per year. In fact, many of the communities located in the most rural counties in my district spend around 5 to 7 percent of their income on energy, while our more urban and suburban counties are typically around 2 to 3 percent, which is more in line with the average for the State.

Considering the fact that much of the cost-effective renewable energy produced in Iowa, particularly from wind, is generated in our rural communities, this disparity and cost burden is particularly pronounced; I might even say maddening.

Ms. Drehabl, first to you, thank you for your testimony today. And can you expand on what specific and unique challenges rural communities face in accessing affordable energy?

Ms. Drehabl. Yes. Thank you for your question.

I will say ACEEE previously published research in 2018 measuring rural energy burdens and did find they are higher. I would say rural households are often frontline communities facing significant climate impacts, economic shocks, and other major challenges to daily life, and they also have less flexibility to move or change how they get around or how they heat their homes, and energy can be more expensive, as you have said.

I think access to energy efficiency and renewable energy is an important piece for economic recovery right now in the midst of the COVID pandemic in these communities, both in terms of lowering people's monthly bills as well as providing training and good job opportunities for people living in rural communities.

Mr. Loebsack. Well, thank you.

And I want to move to Ms. Wyatt now. What is the potential for renewable distributed projects, including distributed wind -- I have been a big champion of that -- in rural low-income communities? And what benefits specifically related to energy burden would these communities see from increased access to clean energy, Ms. Wyatt?

Ms. Wyatt. Thank you for your question, Congressman.

GRID Alternatives itself doesn't have direct experience with distributed wind, but we do work in rural communities, including agricultural communities and Tribal communities, like Navajo Nation, and distributed energy has immense benefit for these communities and the ability to cut their energy bills, as we have seen with a number of our projects, including, you know -- energy burdens are particularly high, as you said, in a lot of rural areas around the country, especially Tribal areas that may even have energy poverty and lack of access to the full modern energy to meet their needs in the first place, where micro grids would be of a special help.

So, yeah, as with, you know, other households in communities, rural households and communities have barriers that it is very much a worthwhile investment to enable them to overcome and receive the savings from energy sources like solar that can cut their energy bills.

Mr. Loebsack. And, additionally, we have seen much of this Iowa, but can you expand on the role of clean energy in stimulating local economies and creating jobs as well?

Ms. Wyatt. Absolutely, yeah. The energy transition is an enormous opportunity. The clean energy sector is many times the size right now, in terms of work force, of the fossil fuel energy sector. It employs many more workers, well over a million. Solar has hundreds of thousands of workers, and they are good jobs. They have -- there are low-barrier-to-entry jobs that can really give opportunities to people who need the most, and there are a lot of skilled jobs. It is a whole range with diverse roles, as long as, you know, policies enable those kind of training programs and everything else to develop, but huge economic opportunity in stimulating local economic development through clean energy, especially distributed clean energy. Those jobs aren't going to be offshored. You can't install a solar rooftop system from China.

Mr. Loebsack. Well, thanks to all of the panelists.

And, Mr. Chair, I yield back my time.

Mr. Rush. The gentleman yields back.

The chair recognizes now the gentleman from Ohio, Mr. Johnson, for 5 minutes.

Mr. Johnson. Well, thank you, Chairman Rush and Ranking Member Upton.

And I, too, I want to associate myself with the comments made by my colleague from Virginia, Mr. Griffith. Mr. Chairman, I, too, have enjoyed working with you and appreciate your passion for the disadvantaged and poor people, regardless of where they live. So I appreciate that about you.

You know, the energy burden, quote/unquote, energy burden defined as the percentage of household income used for energy expenses that we are talking about today, it highlights the important fact that low- and fixed-income families are much more vulnerable to energy price hikes. What is interesting, however, is that earlier in this Congress I recall the majority hosting hearing after hearing highlighting their plans for a zero-carbon recovery while warning about the dangers of fossil fuels and advanced

nuclear energy.

So it begs the question, do my friends in the majority really support lowering energy costs? Because given their attack on fossil fuels in their Green New Deal agenda, specifically coal and natural gas that are so essential in powering America's energy grid, I think it is a bit disingenuous for them to claim that they are concerned about keeping energy prices low for consumers. You simply can't work to lower energy expenses for low- and fixed-income families while simultaneously conducting a full on assault at the local, State, and national levels against some of our primary proven sources of abundant, reliable, and affordable energy.

So, Mr. Bryce, as you have stated in your testimony, natural gas is commonly used directly by consumers for powering their stoves, dryers, water heaters, and furnaces, frequently at a lower energy cost than similar electric appliances.

In my home State of Ohio and across the country, we have seen a number of communities whose elected leaders inspired by this Green New Deal movement have floated future proposals that would actually shut the gas off to their citizens all in the name of combating climate change.

So my question to you: This doesn't sound like reducing the energy burden to me, but can you explain the effect on poor and disadvantaged families if they were forced to switch to electric-only energy to meet all of their household needs?

Mr. Bryce. Well, thank you, sir.

As I pointed out in my presentation a moment ago and in my written remarks, by outlawing natural gas and forcing consumers to use electricity, on a BTU basis, electricity is four times as expensive. So I think, on the face of it, that is a problem.

Now, advocates for beneficial electrification would point out, well, heat pumps and some of these other new appliances are more efficient. Well, that may well be, but

even if they are twice as efficient as the existing ones, you still have a basic cost of energy per joule or per BTU that is twice that of using natural gas directly.

So I think that the other risk here is that by pushing for electrification only, then the system, the grid would be using more natural gas indirectly. Instead of using the gas directly in the home to, say, heat my water or cook my dinner, I would be using an electric appliance that would be fueled by gas burned in the power plant, and then in that process, half to two-thirds of that heat energy is lost simply because of the conversion process.

So, if you look at it from a basic physics standpoint, that is problematic because there is no way to know that that electricity would be coming from renewable sources.

Mr. Johnson. Yeah, I agree with you because we are talking about electric distribution, in your answer for the most part, where that electricity comes from. We don't even address the issue of the generation and how we are going to generate all that energy from renewable or alternative sources.

So how could this affect their bottom lines if these same low and fixed income families happen to be living in a State or locality with aggressive renewable energy electricity mandates?

Mr. Bryce. Well, you know, as I said, I mean, it is going to vary by States and by the prices of electricity. But I think ultimately the banning of natural gas has a regressive effect.

Mr. Johnson. All right. Well, thank you very much.

I will yield back an entire 5 seconds, Mr. Chairman.

Mr. Rush. The chair appreciates the 5 seconds from the gentleman.

The chair now recognizes Mr. Kennedy because I don't see Mr. Welch in attendance right now. Mr. Kennedy, you are recognized for 5 minutes.

Mr. Kennedy. Mr. Chairman, thank you and thank you all. Thanks for calling this important hearing. I want to thank the witnesses for their testimony and their presence today and for the discussion.

This is an issue that is important to me, important to my constituents across Massachusetts, but across my district as well, where we have a variety of economically extraordinarily diverse tied into the northern part and high residential communities and life sciences sector, medical device sector, and a lot of small businesses and small manufacturers where energy costs end up being a driving aspect to their ability to run a sustainable business, but also folks that are very much tied into the economic inequities we are seeing across Massachusetts and around our country and the needs to address climate change.

So all of that compounds into a community that before, shortly before I was elected 8 years ago, had two large coal-fired generation power projects, and that is now down to zero. And, again, enormous opportunities that come with the potential for offshore wind and offshore wind generation -- electricity generation, but trying to make sure that we do that, as we catalyze towards that, do that in a way that empowers frontline communities like Fall River and helps build a new initiative that does not yet exist here in Massachusetts and in the country.

So, Dr. Reames, I wanted to start with you. And thank you for your testimony.

In your statement, you discuss environmental justice, communities, and energy burden, and I wanted to see if you could talk about the overlapping effects of a high energy burden and what we have seen with the effect of COVID-19 particularly on environmental justice communities.

Dr. Reames. Thank you for that question, Representative Kennedy.

What you do see is that communities that are reeling from COVID-19 are definitely

the same communities that have high energy burdens. They are hosting the generation pollution from the energy sector, and they also have, you know, inefficient housing. So you have this kind of combination of disadvantaged, where people live in inefficient housing, so they are wasting energy. They are hosting the pollution from that energy, and the surrounding areas are consuming more energy at a cheaper rate. And so this idea that the equity versus equality argument really plays into, you know, where these things kind of come together.

Mr. Kennedy. 100 percent. And thank you for articulating that and walking us through it.

And, Ms. Wyatt, I wanted to go to you for the next one here, building off that. In your testimony, you talked about the impact of traditional generation on environmental justice communities. I was hoping that you might be able to expand on that a bit, the potential for renewable energy to address some of those impacts.

Ms. Wyatt. Thank you Congressman.

You know, there has just been a lot of recent conflicting science on the detrimental impact on air pollution in particular but the water pollution from fossil fuel generating sources across the -- you know, the fence lines, right outside the fence lines of these facilities, the communities. They are disproportionately likely to be low income and communities of color, and so they face higher rates of asthma, cancer, birth defects. It also contributes to COVID mortality.

And the way -- you know, clean energy can remedy this, of course, directly by displacing the need for dirty fossil fuel energy generation directly one for one. It also, you know, empowers the communities to have their own energy that meets their needs and is more affordable. As we have said, clean energy from the sun and wind is more affordable in the short and long run.

So, by reducing pollutants and increasing access to affordable clean energy at the same time, you are really reducing racial disparities in a way that our country, you know, desperately needs.

Mr. Kennedy. So I want to build on something you said there just really briefly.

But pollution is a subsidy, right? It is a cost to society that those that generate it don't bear. We all do. There is a common critique here that clean energy is just too expensive to be competitive that, in my mind anyway, doesn't take into account, one, the subsidies that many of those existing fossil -- energy generation infrastructure one receives to the pollution, the contamination that comes with it and how we all bear that cost.

You have got about 20 seconds, Ms. Wyatt, but to the extent that you can explain all of this in 20 seconds as to why -- the economic piece of it here. I would love to have you go. Twelve seconds, go.

Ms. Wyatt. Sure. The current -- we don't have a free market right now. The subsidies of the ability to pollute our atmosphere and people's lungs are in the trillions. They are not accounted for in energy bills or otherwise, but policy needs to account for them as a matter of justice.

Mr. Kennedy. Well done.

Thank you. I appreciate it.

Ms. Wyatt. Thank you, Congressman.

Mr. Kennedy. Thank you. I yield back.

Mr. Rush. The gentleman yields back.

The chair understands that Mr. Bucshon is unavailable at the moment, so the chair now recognizes Mr. Hudson for 5 minutes.

Mr. Hudson. Thank you, Mr. Chairman. Thank you for holding this important

hearing, and thank you to our panelists for being here today as we examine an issue our most economically vulnerable constituents face, which affordability of energy.

Before the coronavirus shut down our energy economy, all Americans were benefiting from an energy renaissance. We had become the number one producer of oil and natural gas in the world, which has lowered to millions of Americans. President Donald Trump's aggressive energy initiatives have cut regulatory burdens on our energy sector and have saved Americans over \$200 billion annually through lower energy bills.

At the same time, the United States has cut our emissions the last 20 years more than the next 12 countries combined, and that is through innovation and private sector technology. However, Joe Biden, the Democratic nominee for President, who described himself the other night as, quote, he is the Democrat Party, if you look at his web site to figure out what the Democrats' energy plan is, it says he supports the Green New Deal.

The Green New Deal is estimated to raise Americans' energy bills by as much as 286 percent. So I find it ironic this hearing is about examining ways to lower energy costs for people, but the other side's energy plan would dramatically increase energy costs for Americans. And as our panelists have eloquently explained, that impacts lower income families the most.

I am an all-of-the-above energy supporter. Just this week, Duke Energy in North Carolina, announced plans for a 1.1 megawatt floating solar facility at Fort Bragg, which would be the largest floating solar plant in the Southeast. This will bring more clean energy to North Carolina, enhance our grid, and increase Fort Bragg's energy defense resiliency.

We can build a cleaner energy economy effectively and affordably through innovation and technology. I am proud to have worked to lower energy costs and to give my constituents more money in their pockets.

Now, Mr. Bryce, you mentioned in your testimony that policymakers must have a frank and transparent discussion about how to lighten the energy burden, not increase it. When renewable energy policies are proposed, do you think there should be more public analysis to estimate what the full cost would be? Is that something we should use to better inform our own decisions on any plans to decarbonize the economy?

Mr. Bryce.

Mr. Bryce. Yes, sir, I think absolutely. But let me be clear, this is not an easy assignment. As I mentioned earlier, the American electric grid is balkanized. We have State regulators. We have the regional transmission operators. We have Federal regulators that all have a say in what local communities do and what they -- how they treat generation resources.

What I think is the other big challenge here is that electric -- overall electricity demand in the United States has been flat for years. Roughly the last 10 years electricity demand has not grown at all. That is due to greater efficiency, which is a very worthy goal, but what we see now is an increased effort -- or really competition among different generators for the remaining -- for the share of the pie and who gets priority access or distribution on the grid.

So these are complicated challenges, and I don't have the perfect answer to say this is how we should do these price analyses. But, yes, these kinds of analyses and knock-on effects on ratepayers that would include all of the costs, for transmission, for high-voltage transmission, for new transformers, poles, wires, synchronous generation, all of these things that are needed to augment and offset the generation that is being added to the grid.

So there is no simple answer here, sir. But, yes, getting a better handle on these price impacts is essential.

Mr. Hudson. Well, I appreciate that, and I agree with you. You know, I think Republicans and Democrats agree we have got to find ways to reduce emissions, and I think we all care about our consumers, particularly the most vulnerable.

Mr. Chairman, I agree with my colleagues that we recognize that you have been a champion for those folks all around the country. But I think the difference is Republicans want to continue to reduce the emissions through innovation, through private sector technology, developments and advancements. And we have a role to play in that, but we don't have to cripple our society. We don't have to double or triple the costs on our lowest income families to achieve these goals.

So I look forward to working with you, Mr. Chairman, on that. And, with that, I will yield back.

Mr. Rush. The gentleman yields back.

The Chair now recognizes the gentlelady from New Hampshire, Ms. Kuster, for 5 minutes.

Ms. Kuster. Thank you, Mr. Chairman, for convening this important hearing.

This committee has worked tirelessly to address the public health and economic consequences of the COVID-19 pandemic, and I appreciate today's hearing, which touches on the affordability of energy and electricity, a topic that is top of mind in New Hampshire as we head into another winter season.

While our economic recovery has begun and businesses begin to navigate this new normal, we cannot lose sight of the reality that millions of Americans and tens of thousands of Granite Staters are still out of work. As a result of the pandemic, New Hampshire's August 2020 unemployment rate was triple that of August 2019, and it has caused more Granite Staters to struggle with their energy bills.

According to data from Eversource, one of the largest utility companies in my

State, the number of individuals and small business ratepayers who are more than \$125 behind on their energy bills has nearly doubled, from 21,000 in September of 2019 to 38,000 in September of 2020. The New Hampshire Electric Co-op reported that the number of customers who were more than 90 days in arrears on their bills have tripled from August 2019 to August 2020.

And with the expiration of the pandemic unemployment compensation and lost wage assistance program, I fear that more Americans will soon fall behind on their energy bills. Thankfully, in New Hampshire, individuals who are struggling with utility bills will not have their service cut until at least April of 2021 if they certify that they are experiencing financial hardship. But after that point, I fear that Granite Staters who already were paying too much for their energy bills might not be able to pay off larger bills that have accrued during the pandemic even with good-faith efforts by utility companies to put ratepayers into gradual repayment plans.

Dr. Reames and Ms. Drehobl, do you think Congress should consider setting aside dedicated funds to help Americans pay off unaffordable energy bills that accrued during the pandemic?

Dr. Reames. Thank you for your question, Congresswoman.

I do think that the increased funds for LIHEAP is a perfect way to use those funds to pay off accrued debt. There was a pilot in Michigan that did direct payments, so working with the utility company to identify households that were behind on their utility bills and actually made those direct payments on those customers' behalf.

So I think this is an opportunity for utilities, regulators, and the Congress to work together.

Ms. Kuster. Thank you.

Ms. Drehobl, anything to add?

Ms. Drehobl. I agree with Professor Reames, and I think utilizing LIHEAP would be a good suggestion.

Ms. Kuster. Great.

So let me switch gears and touch on the importance of the Weatherization Assistance Program that provides funding to local governments and nonprofits to help low-income families make their homes more energy efficient.

Again, for the two of you, should Congress increase funding for the Weatherization Assistance Program? And what would be an ideal funding level?

Dr. Reames. I will comment really quickly. If you look at funding for LIHEAP and weatherization, we spend about seven times the amount on LIHEAP, which I view as a temporary solution. So we should increase the funding for weatherization. If we think 35 million households qualify and we have only weatherized about 7 million, like Ms. Drehobl has said, it would take, you know, several decades to weatherize all of the homes that qualify.

Ms. Kuster. Anything, Ms. Drehobl, before my time is up?

Ms. Drehobl. Sure. Yeah, I would add that ACEEE supports increasing funding for LIHEAP at a consistent rate to move towards the funding levels that we had during the ARRA time, and that could help weatherize many more homes than we are currently weatherizing. So I think ramping up this program would be helpful.

Ms. Kuster. Great. Thank you so much for your testimony.

And, with that, Mr. Chair, I yield back.

Mr. Rush. The gentlelady yields back.

The chair now recognizes the gentleman from Michigan, Mr. Walberg for 5 minutes. If you can turn on your -- unmute, Mr. Walberg.

Mr. Walberg. Thank you. Thanks for reminding me. And, Chairman Rush, it is

much appreciated that you have this hearing today. Having been born and started my raising life in your district, I know exactly where you are coming from and appreciate your commitment.

Also, it is good to have the representative from the University of Michigan here today, Dr. Reames. I started out at that little university on the banks of the Red Cedar just the beginning this week as we dedicated the facility for radioactive isotope beams, which was exciting, and so it is good to end the week here as well discussing the issue of energy as it touches people's lives. So thank you for being with us.

On the issue of energy affordability in colder climates like my home State of Michigan, 75 percent of our residents rely on natural gas for home heating because it is efficient, it is dependable, and it is affordable. In fact, the Michigan Public Service Commission has found that natural gas saves the average Michigander over \$1,000 annually compared to an all-electric home.

And so, Mr. Bryce, could I ask you to elaborate on what your research has found about the role natural gas can play in keeping customer bills affordable, especially in the climates like we have in Michigan, the northern climes where significant cold weather remains and we have a very, very plentiful source of natural gas?

Mr. Bryce. Sure. Thank you, sir.

Yeah, just one quick comment, which is that the effort to electrify all residential use sounds good, but particularly in colder States like Michigan -- my wife is from Ann Arbor. My father-in-law taught at the University of Michigan. It gets cold there, really cold, and heat pumps don't work in very cold weather. You need resistance heaters, which then adds more demand to the electric grid, which then has knock-on effects in terms of the cost of upgrading the grid to accommodate all of that energy use that was being provided by natural gas.

So I think particularly the effort to take gas out of residential use and out of commercial and industrial use, for heating in particular, heat pumps simply are not a solution, a viable economic solution in colder climates.

Mr. Walberg. Mr. Bryce, going on from that, our Governor, Governor Whitmer, recently issued an executive order making Michigan carbon-neutral by 2050. Many energy companies in my State were already undertaking aggressive steps to install more renewables. I know that full well having the energy district of the State of Michigan where over 35 percent of all the energy is produced right in the Seventh District with DTE and Consumers Energy headquartered in my district.

Their aggressive steps with renewables has, like wind and solar, may require substantial new transmission build out, and it already is. However, energy providers must also ensure the grid is reliable and can meet demand on days when the wind isn't blowing or the sun isn't shining, and we have a lot of those days in Michigan. Natural gas, as well as nuclear, are 24/7 power sources to help provide certainty to the grid. Having a nuclear plant in my district as well, we recognize the value of that, and yet we are moving away.

How should we think about the future of our energy mix and the role natural gas and nuclear can play in generating electricity most cost-effectively for consumers?

Mr. Bryce. Well, thank you, sir. That is a very good question.

And let me be clear that the challenges facing the nuclear plants across the country are formidable. The low price natural gas is undercutting the wholesale price -- or is lowering the wholesale price and, in some cases, making these big nuclear plants, which have high fixed costs, very low fuel costs but high fixed costs, particularly in terms of labor, so the utilities are saying, well, we will shut them down unless we get some -- effectively some kind of consideration; call it a subsidy because that is what it is.

But I am in favor of a diverse portfolio. And what I fear -- I am adamantly pro-natural gas, but what I fear is happening in the United States is that, with the shuttering of all of these coal plants and the shuttering of these nuclear plants, the U.S. grid is going to be too reliant on a single fuel, which is natural gas. And I think that potentially is a liability, particularly during -- as we have seen during the -- what was it, not the cold bomb or the -- you know, the Arctic cold fronts that we have had where natural gas supplies are strained, and those are just-in-time deliveries through pipelines.

So I think this issue has to be looked at in the entirety around the country because I do fear that we are becoming too reliant on gas on the grid as a whole.

Mr. Walberg. Thank you.

Mr. Chairman, I yield back.

Mr. Rush. The gentleman yields back.

The gentleman, Mr. Walberg, is the last member on the minority side that is present right now. So we will go straight through the members on the majority side.

Ms. Barragan, you are recognized for 5 minutes.

Ms. Barragan. Well, thank you, Chair Rush, for holding this hearing on energy equity.

Whether it is cost, pollution, or jobs, our energy system's dependence on fossil fuels doesn't work for communities of color. Our transition to a clean energy economy offers a unique opportunity to reverse the injustices in the current system. It is critical that we don't leave behind Black, Latino, and indigenous communities behind in these efforts.

I want to start by responding to the ad by a group, United Latinos Vote, that Ranking Member Walden filed for the record to imply that Latinos in California are concerned about moving from fossil fuels to clean energy.

United Latinos Vote is an industry front group, funded in part by a \$15,000 donation by Pacific Gas and Electric. One recent campaign they were involved in was in response to a gas ban proposed by the small city of San Luis Obispo. There hasn't -- there wasn't opposition from local minority groups, so the fossil fuel industry manufactured opposition through United Latinos Vote, which is based 230 miles away from San Luis Obispo in Oakland.

California Environmental Justice Alliance, an environmental justice group representing communities of color, called the actions by United Latinos Vote, quote, gas lighting aimed to manipulate the public and decisionmakers on a just transition away from fossil fuel based economy that most hurts people of color, end quote.

I think it is an important principle of equity and energy justice that we allow communities of color to speak for themselves, make their own decisions without this outside political influence and money into the community.

And so, with that, Ms. Wyatt, I want to start with you first. I want to thank you for all of the work that you have done. GRID Alternatives has done amazing work, especially in my district in South Los Angeles. With communities in my district, they have gone out and done the work on the rooftops. Now, recently, you installed solar and battery storage in Wilmington's Harbor City Community Job Center and individual homeowners' solar systems in Watts.

Now, these projects create green jobs while reducing energy costs and pollution. Many of these clean energy projects are supported by grants from California's climate programs. I want to see more of these community-led projects in my district and in Black, Latino, and indigenous communities across the country.

What climate programs can Congress enact to help achieve this?

Ms. Wyatt. Thank you very much for your question, Congresswoman, and your

kind words about the great work that our construction teams and others are doing in California.

California has pioneered a lot of great programs, and a lot of them have had a lot of success and could be scaled up. The combination of subsidies that get the -- just bridge the gap to enable institutions serving low-income people and low-income households themselves directly on their own rooftops to get the benefits of clean energy. Those could come from the Federal Government, as well as the State government. They could go through State and local governments or other institutions, and we have made a number of recommendations in our written comments on some suggestions for how to do that. There have been a number of legislative proposals in recent years. These could be coordinated, in addition, through weatherization assistance and energy assistance. Again, we don't want to set up clean energy to compete with those very important programs, but by fully funding those and, in addition, including renewable energy, low-income renewable energy with those programs, you could really multiply the beneficial impacts.

You know, we also leverage the investment tax credit wherever we can, making that directly accessible to low-income communities and Tribes, and nonprofits would really enhance its utility and level the playing field for investments in renewable systems for those beneficiaries.

Congress has a lot of room for creativity to get clean energy to where it is going to have the most benefit.

Ms. Barragan. Great. Thank you so much.

Dr. Reames, in the short time I have left, in 2017, you released a study on energy efficiency investments by Michigan's utilities which showed that most of the dollars and energy savings went to wealthier ratepayers.

Can you talk about how State laws led to this inequity and whether this is a problem in other States?

Dr. Reames. Thank you for your question, Congresswoman.

I think we need to look at how we promote and push equity investments, particularly focusing on what partners are made between utilities and State regulators to reduce the cost of energy-efficient technology, how we market to low-income communities, how we allow community groups as trusted members in that community to promote these programs as well. So there is knowledge gaps, there is cost gaps, and participation gaps that lead to those disparities.

Ms. Barragan. Great. Thank you.

With my time expired, I yield back.

Mr. Rush. The gentlelady yields back.

The chair now recognizes the gentleman from Indiana, Mr. Bucshon, for 5 minutes.

Mr. Bucshon. Thank you, Mr. Chairman.

I will be brief, a couple of questions real quickly.

Ms. Wyatt, do we have a national plan for recycling solar panels?

Ms. Wyatt. We do not have a national mandate. There is a lot of work being done in the industry regarding recycling and reuse of solar panels after multiple decade lifetimes.

Mr. Bucshon. Yeah, because, I mean, you are looking at, what, 20- to 30-year life expectancy.

What do we do with the ones that are end of lifecycle right now?

Ms. Wyatt. Some of the early solar systems are approaching the end of their lifecycle, not GRIDs, and so I will get back to you with some additional information.

Mr. Bucshon. Yeah, sure. I will tell you what we do with them. First of all, I am an all-of-the-above energy supporter, so I support solar energy. But I am concerned about we are not looking at the entire lifecycle of that form of energy source. What we do now is put them in landfills. So, you know, as we expand our solar energy and the solar energy space, 20, 25 years from now, we are going to have landfills full of these things, which have heavy metals, all kinds of other things. So we need to work on that, which I am.

So I do find it frustrating sometimes when we talk about different forms of energy, we don't talk about the entire lifecycle of an energy source, and that is one of the big ones there.

Ms. Wyatt. I agree. We also don't talk about the full impacts of the fossil fuel energy sources and their life cycle impacts the climate.

Mr. Bucshon. Fair enough, fair enough.

Dr. Reames, have you studied rural America with the issues that you have been talking about? Because I represent southwest Indiana. It is all rural. And I can tell you some of the challenges that rural America faces are very similar to urban challenges, with low-income individuals, with problems with accessing affordable energy. And also, you know, a lot of their homes and businesses lack, what I would say, improvements and weatherization and other things. Have you studied rural America?

Dr. Reames. Thank you for your question, Congressman.

I have not studied rural America as much as I have studied urban America.

Mr. Bucshon. Sure.

Dr. Reames. But I think a lot of those studies I do, particularly like food insecurities studies, when we did the lightbulb study, we did find that there were replicate studies in urban areas that found the same challenges of lack of access to LED

lightbulbs or more expensive LED lightbulbs.

Mr. Bucshon. Yeah, I mean, I think it would be good to expand out, you know, to look at the challenges we face in rural America as also the ones that we face in urban America.

So, with that, Mr. Chairman -- go ahead. Do you have another comment, Mr. Reames?

Dr. Reames. No, sir, I agree with you.

Mr. Bucshon. Okay. Great.

So thank you, Mr. Chairman. I yield back.

Mr. Rush. The gentleman yields back.

The chair now recognizes the gentleman from Arizona, Mr. O'Halleran, for 5 minutes.

Mr. O'Halleran. Thank you, Mr. Chairman and Ranking Member Upton, for holding today's hearing, and thank you to the panelists for being here.

As we enter into the final weeks of the 116th Congress, I would like to briefly summarize some of the key actions the House has voted on, passed, and sent to the Senate to promote clean energy for Americans: the Climate Action Now Act, to reenter the United States into the first climate accord; the Moving Forward, H.R. 2, to revitalize our Nation's crumbling infrastructure and invest in the renewable energy and storage projects; and the Clean Energy Jobs and Innovation Act just recently to modernize our Nation's energy and environment and address some of the climate change issues.

While there are many more decisive actions to highlight, including many taken by the Energy and Commerce Committee this Congress, as lawmakers, we must ensure clean, affordable, and reliable energy is truly available to everyone as the energy economy continues to evolve.

As many of you know, I am proud to represent 12 Native American Tribes in my district, including the Navajo Nation. Since today's discussion is focused on the energy burdens many Americans face, I would like to highlight an energy burden many may not be aware of. Arizona's First Congressional District has a high level of seniors who are on fixed incomes and below the poverty line. Additionally, many people in our work force have not seen a wage hike that has kept them up with inflation for some time. On top of that, my district has a tremendous amount, on a per capita basis, of people on Medicare and Medicaid, that are on those types of fixed incomes.

Every winter, thousands of Navajos drive miles from their homes to load up their trucks from community coal heaps. For many Navajo, these coal heaps are the only source of light and heating for their homes.

For many thousands of families, including members of the Navajo Nation and the Hopi Tribe throughout Northern Arizona, energy burdens are compounded by unemployment rates between 50 and 80 percent, and that was pre-virus I will say, following the recent closure of the Navajo Generating Station, which provided many of the good-paying jobs to provide for their families. In addition to the policy incentives for promoting energy efficiency and renewable energy, I believe the strength of the work force plays a factor in the energy burdens a family may face.

I look forward to assisting communities in my district, help them navigate the energy transition, and lessen their burden on energy.

Ms. Drehobl, I got that right, I hope, and, Ms. Wyatt, for communities disconnected from the electric grid or on the front lines of the energy transition, how can employment opportunities in the renewable energy sector, which requires specialized skills and training, be made more available for low-income and minority households?

Ms. Wyatt. If you don't mind me jumping in first. GRID Alternatives and our

Tribal program have pioneered a lot of programs to train Tribal members. Recently we just had a Tribal training program for some members, and they were trained at a centralized location, and they are taking that knowledge and that on-the-ground experience back to their Tribes with them, that technical training. So it is really invaluable.

Again, it just takes deliberate programmatic support to combine the benefits of work force training with establishing the clean energy availability where it is needed on Tribal areas.

Mr. O'Halleran. And, Ms. Wyatt --

Ms. Drehobl. Sure. I will add to that.

From an energy-efficiency perspective, there is also major job opportunities for training of work force in rural areas in similar ways.

Mr. O'Halleran. Oh, I am sorry. I got the names mixed up here with the faces. Thank you.

Ms. Drehobl. That is quite all right. Thank you.

Mr. O'Halleran. Dr. Reames, I am sure you know the energy transition may lead to excess transmission line capacity in communities where previous power generation has been retired. I have three more coal generation plants in my area that will eventually be closed.

Could you comment on whether your research has examined how rural and remote communities replace retired power generation with renewable energy?

Dr. Reames. Just really quickly, I have not studied it intently, but I have looked at how rural communities -- just a couple of pilot studies in Michigan are looking at adding community solar for rural communities and partnering with weatherization to ensure that the homes are more efficient and that they have equitable access to renewable energy.

Mr. O'Halleran. Does somebody else want to speak?

Mr. Rush. No. The gentleman's time has ended. The gentlemen yields back his time.

The chair now recognizes the gentleman, Mr. Duncan, for 5 minutes.

Mr. Duncan. Thank you, Mr. Chairman.

First of all, I want to thank the panelists for being here. I want to thank especially Robert Bryce for being here. I have read your book "Power Hungry." You can see we have read it quite a bit and referenced it. I recommend it for everyone on the committee, but I don't think my colleagues on the other side of the aisle will like it too much because you clearly point out the true costs of green energy and show what works. I want to thank you especially for your sections on how the American energy renaissance has created an opportunity for us to export energy sources, like clean-burning natural gas, to other parts of the world to improve the quality of lives of so many people so that they have better air in their homes, the ability to keep food fresh, the ability to heat and cool, keep mosquitos out, all of the other things that are quality-of-life issues that you point out in this book that are really good.

I would like to switch gears to talk about nuclear for just a minute. My State of South Carolina, we get 56 percent of all of our electricity from nuclear power. That is 95 percent of at all of our clean carbon-free electricity. Renewables, hydro, wind, and solar, make up less than 5 percent of the carbon-free sources in our State.

As you know, wind and solar require huge swaths of land, and their power density is weak compared to nuclear. You mentioned that earlier just briefly. To match the power produced by one nuclear reactor would require 2,077 megawatt wind turbines. So, you know, you have mentioned California's climate goals would be better served by keeping the Diablo Canyon Nuclear Power Plant online and by encouraging the

deployment of next generation reactors. That is something I agree with.

Could you talk about what it would mean to replace closing nuclear units with wind and solar, especially in a State like South Carolina? And would it be even possible in the terms of land use and economics?

Mr. Bryce.

Mr. Bryce. Well, thank you, Mr. Duncan.

I have done the calculations in both my new documentary "Juice" -- you didn't plug this one, so I am going to plug it. "Juice: How Electricity Explains the World" came out in June. We visited the Indian Point nuclear plant in New York, and the calculations are very straightforward. That plant covers 1 square kilometer, produces about 16 terawatt hours of electricity per year. To produce that volume of electricity, that quantity of energy with wind turbines would require a land area of 1,300 square kilometers. So roughly 1,300 times more land would be required to replace that one nuclear plant. And, unfortunately, that plant, which provides about 25 percent of New York City's electricity, is being shuttered prematurely. That plant could run for many more decades, but there was no political support for it, so it is, unfortunately, being closed.

One other point is that the land use conflicts in New York State, as I mentioned earlier, are as pitched as in any other State in America. You have numerous small towns and counties who have declared themselves saying, "We don't want more wind capacity in our counties," and has led to the Governor now essentially saying, "Well, we are going to override local zoning," which is really unprecedented, the overruling of home rule because the State is in a rush to build more renewables.

So these kinds of land use conflicts are going to become much more common and, as I already mentioned, over 280 rejections or restrictions already in the United States

since 2015.

Mr. Duncan. No doubt, no doubt. Is that an Ohio State Buckeye on your lapel pen there?

Mr. Bryce. Oh, well, no. Since we are talking about electricity, this is ready kilowatts.

Mr. Duncan. I don't care. I just wanted to make sure because I am a Clemson guy.

Real quickly, the fact is that exporting oil and gas to energy poor nations will help save thousands, if not hundreds of thousands of lives. I want to give you an opportunity to talk to you about how America can play a role in the geopolitical arena to improve the quality of lives of so many people around the world.

Mr. Bryce. I think it is obvious, in terms of geopolitics, the U.S. becoming an LNG exporter has had significant ramifications in Europe. Poland signed a long-term LNG supply deal with Cheniere Energy about 2 years ago because Poland doesn't want to rely on Russia for their gas. They have a long history with Russia. It is all bad.

But I think -- you didn't ask this question, but it is clear to me that in terms of geopolitics, natural gas is becoming the energy form that is driving a lot of changes in geopolitics, with Israel sending gas to Egypt, the Egyptians and the -- now supplying on a 30-year deal through the Power of Siberia Pipeline gas to China. These are significant and long-term deals that are going to affect geopolitics for decades to come.

Mr. Duncan. Absolutely. I think you are spot on with that. Again, I will recommend your book, if folks want to really see a true picture of energy.

With that, Mr. Chairman, I will yield back the remaining 10 seconds. Thanks.

Mr. Duncan. Thank you, sir.

Mr. Rush. The gentleman yields back.

The chair now recognizes the gentlelady from Delaware, Ms. Blunt Rochester, for 5 minutes.

Ms. Blunt Rochester. I join my colleagues, Mr. Chairman, in thanking you for calling this important and timely hearing, and I thank all of the witnesses for testifying today.

In my State of Delaware, we are suburban, urban, and rural. And as is the case throughout our country, we are seeing families fall farther behind on their electricity bills. With winter approaching, this is a daunting reality for many folks. The COVID-19 pandemic has magnified the health, economic, and environmental racial disparities in our society. Black and Brown communities are seeing higher infection and death rates from this disease. Black and Brown communities are more likely to spend a larger percentage of their household income on energy bills. And Black and Brown communities are being hit the hardest with the economic recession we are facing.

The economic upheaval we are experiencing from this pandemic has presented us with an opportunity to correct these injustices and rebuild a cleaner and more equitable country.

One of my passions is the future of work, which is why I created a bipartisan caucus to look at solutions for the myriad challenges facing our companies and workers, not least of which is this pandemic. With clean energy, we have an opportunity to accelerate into the jobs of tomorrow.

The impact of COVID-19 pandemic has caused -- has forced us to face the future work sooner than we thought, and while this certainly feels daunting, I also see it as an opportunity. We need high-paying jobs that not only minimize environmental impacts and help us fight climate change but ensure that all Americans have access to clean and affordable energy.

So my first question is for Ms. Wyatt. Following up on Mr. McNerney's questions about how to increase women and people of color in the clean energy industry, I would like you to give -- I would like to give you some more time to expand on some of the programs that you mentioned, how we can in the Federal Government continue to incentivize and invest in programs like these so that clean energy jobs are accessible to all.

RPTR MERTENS

EDTR HUMKE

[1:08 p.m.]

Ms. Wyatt. Thank you, Congressman.

Congress can start by expanding existing Federal job training programs like the HUD Jobs Plus program and adding an emphasis on the clean energy jobs that, as you said, are the jobs of the future as well as the jobs of the present. These are large and growing industries.

Congress can also expand existing grants that provide solar and renewable energy training, especially focused on low income and underserved communities and workers who are displaced from fossil fuel industries. GRID particularly supports funding for the SolarCorps program supported through Americorps VISTA, one of the programs that we benefit from greatly because career choices are shaped by experiences and education prior to entering the workforce.

Congress should incentivise resources for HBCUs, travel colleges, minority sharing institutions, programs for women, high schools, and technical schools to really ensure that we are being as inclusive as possible.

And there is ample opportunity to create new renewable energy, storage, and electric vehicle infrastructure-focused training programs that provide living wages and benefits during training which is very important for ensuring that people who otherwise can't afford to just take off time from work to train into these new careers are able to access those.

Again, the SolarWorks D.C. program is an example of a program that combines clean energy access with workforce development training, real world experience, and wrap-around services, and it is had a lot of great success.

Ms. Blunt Rochester. You know, just to follow up on that, with our high unemployment rates right now, we know that we are going to have to create new, high-paying jobs with varying training requirements. Why is the clean energy industry ideal for creating these types of jobs?

Ms. Wyatt. The clean energy industry has a lot of facets. There are low barrier to entry jobs such as solar installation that can really form the basis for entire, very rewarding career paths.

Average wages for even entry level jobs of that type are higher than the national average, and they allow people to support their families while they are growing in these careers and learning on the job.

Again, the different facets of the clean energy revolution are interrelated, so people who are exposed to solar installation can also be exposed to weatherization and efficiency services and really just take advantage of the best opportunities where they are and for where they are in their lives to be part of this transition.

Ms. Blunt Rochester. Thank you. And I have 20 seconds left.

Ms. Drehabl, as we are transitioning our society to telework and distance learning, and telehealth, can you talk about what low income communities and communities of color can do to not be left behind, what we can do as a society?

Ms. Drehabl. That is a great question. I think more investment in efficiency weatherization to help people use less energy while they are spending more time at home is really needed right now.

Ms. Blunt Rochester. Thank you so much.

And I have run out of time, and I yield back. Thank you.

Mr. Rush. The gentlelady yields back.

The chair now recognizes Ms. Schakowsky who has waived on this subcommittee

for the purposes of asking questions of our witnesses.

Ms. Schakowsky of Illinois, you have 5 minutes.

Please unmute.

Ms. Schakowsky.

Ms. Schakowsky, unmute.

Ms. Schakowsky.

Ms. Schakowsky. Okay. There we go. I am so sorry. I really apologize.

Mr. Rush. Quite all right.

Ms. Schakowsky. And thank you, Mr. Chairman, for letting me waive onto this subcommittee.

I have to tell you. There are times that I get so frustrated about this issue about the challenge between and the discussion between whether or not it is about jobs or it is about the environment because it seems to me that there is no contradiction whatsoever.

And we are hearing about communities that are facing higher energy costs around the country. And while I know that is true, there are also low income communities, communities of color are facing also higher health risks in their communities, and we cannot have this kind of division between saving our environment and jobs.

There is, in my view, no contradiction. But it is a contradiction to me to find that the permanent tax breaks to the fossil fuel industry are seven times larger than those in the renewable energy sector.

And so I did want to ask Ms. Drehobl -- is that correct? I know I have been listening all day how to say it, and I still didn't -- probably didn't say it right.

But how do we reconcile these things? I think this is the existential issue of our world right now, that we get a grip on carbon emissions in the atmosphere but also that we make sure that we address the inequities among communities and the disparities that

are faced.

I wonder if you could just talk a little bit more, and I know you have talked quite a bit about it already today, about that and the frustration I feel in the debates that are going on right now, including by the President during whatever you call that, the debate.

Ms. Drehobl. Sure. Thank you for your question.

I agree with you that I don't think these are separate things. I think investing in clean energy leads to more jobs being created. It leads to a healthier environment. It leads to reduced emissions of greenhouse gases, and all of these things can also benefit low income communities if there is an environmental justice lens set with these policies as we move forward.

I think it is important to note too that when it comes to energy prices and costs that just because prices are low also doesn't mean that people are going to have affordable energy. If your home is inefficient, then you might need to use a lot more energy to keep it at a comfortable level. So I think, you know, discussions around prices also need to tie in with the reality of the bills that people are paying as well.

Ms. Schakowsky. So we have what we call the LIHEAP program to help people pay their energy bills. I am wondering if you know much about that, or if anyone does, whether or not we are building into that when we help make homes more energy efficient if we are using energy efficiency. Anybody know about that?

Ms. Drehobl. Well, the LIHEAP program does allow for States to spend some of that portion of money for weatherization. They can have a waiver of 15 to 25 percent.

So that program not only helps with the immediate need that people have to pay their energy bills but also can be leveraged for that long-term solution of weatherization.

Ms. Schakowsky. Let me also ask about the importance, because I think there is one, of making sure that communities are involved in the solutions that they have -- that

are offered to them and making decisions for their own communities and if you think that there is enough of that.

Ms. Drehobl. Yeah. I think that is vitally important. I think a lot of policies and programs have been designed without the involvement of communities. And I have seen, you know, different practices from utilities in States and the Federal Government working more directly with communities in the process of designing policies and programs. And I think that really is key to make sure that we have a just energy system.

Ms. Schakowsky. Well, thank you so much. And, again, thank you, Mr. Chairman.

Sorry about my inability to promptly unmute myself, but it has all been worth it for me, anyway.

So thank you very, very much, and I yield back.

Mr. Rush. The gentlelady yields back, and that concludes the witnesses' questions.

And I want to again thank the witnesses for participation in our hearing today. And, again, I want to repeat my apologies for the shaky start of this hearing, the technical glitches that we were confronted with.

And I want to remind members that pursuant to committee rules, they have 10 business days to submit additional questions for the record to be answered by the witnesses who have appeared. I ask each witness to respond promptly to any such questions that you may receive.

Now, I don't know if we have any unanimous consent requests.

I don't see any, so -- we have unanimous consent requests, and where are they? Let me see.

All right. Unanimous consent requests are the January 2019 Nature and

Sustainability article entitled Disparities in Rooftop photovoltaics deployment in the United States by Race and Ethnicity.

Also, a letter from the New York Technology Forum. Additionally, a letter from the National Energy Assistance Directions Association and an ad in the L.A. Times from the Sierra Club, and lastly, an ad in the L.A. Times from the United Latinos Vote.

Without any objections, the documents are entered into the record.

[The information follows:]

***** COMMITTEE INSERT *****

Mr. Rush. And without any further objection, at this time, the subcommittee stands adjourned.

[Whereupon, at 1:21 p.m., the subcommittee was adjourned.]