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H.R. 4526, THE 21ST CENTURY ENERGY WORKFORCE

DEVELOPMENT JOBS INITIATIVE ACT OF 2014

WEDNESDAY, SEPTEMBER 17, 2014

House of Representatives,

Subcommittee on Energy and Power,

Committee on Energy and Commerce,

Washington, D.C.

The subcommittee met, pursuant to call, at 10:05 a.m., in Room 2322, Rayburn House Office Building, Hon. Ed Whitfield [chairman of the subcommittee] presiding.

Present: Representatives Whitfield, Shimkus, Pitts, Terry, Latta, Olson, McKinley, Griffith, Rush, Tonko, Yarmuth, Engel, Green, Barrow, and Waxman (ex officio).

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Staff Present: Nick Abraham, Legislative Clerk; Leighton Brown, Press Assistant; Allison Busbee, Policy Coordinator, Energy & Power; Tom Hassenboehler, Chief Counsel, Energy & Power; Jason Knox, Counsel, Energy & Power; Matt Connolly, Minority Legislative Assistant; Hannah Green, Minority Policy Analyst; and Alexandra Teitz, Chief Counsel for Energy and Environment.

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Mr. Whitfield. I would like to call the hearing to order this morning, and I want to thank our panel of witnesses. We look forward to your testimony, and I will be introducing each one of you right before you give your statement, but we do thank you for attending this hearing this morning. This morning's hearing -- and I am going to recognize myself for 5 minutes for an opening statement.

This morning's hearing focuses on H.R. 4526, the 21st Century Energy Workforce Development Jobs Initiative Act of 2014. You all got a long title on this bill. I am particularly pleased to work with my friend, Bobby Rush here, the ranking member of this subcommittee. He authored this legislation, and all of us think that it is vitally important to explore the opportunities that this legislation will provide.

The dramatic increases in domestic oil and natural gas production could not have come at a better time for the Nation's struggling economy. As a result of America's oil and gas boom, energy is one of the very few sectors of the economy where we have seen substantial job growth in recent years, and these jobs pay very well. In fact, it has been reported that graduates of the South Dakota School of Mines and Technology are commanding higher salaries than graduates from some of the business programs at Harvard.

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The Energy Information Administration and others predict continued increases in domestic oil and gas output in the years ahead, and that translates into growing demand for qualified employees to produce that energy. Many of the Nation's fastest growing State economies are energy producing States, and that is not likely to change any time soon. People with the right training will be needed in even greater numbers, from the geologists and engineers who use state-of-the-art technology to find the oil and natural gas, to those who drill and operate the wells, to those who design and build and maintain the specialized equipment that makes it all possible.

And beyond the oil and gas boom there is still jobs related to coal, nuclear, and many other sectors relating to energy. There are over 800,000 jobs in the U.S. supported, for example, by the coal mining industry alone.

There is no doubt that the energy industry offers promising careers for young people, and we need to make certain that these opportunities exist for all Americans, including African Americans, Hispanic Americans, and women, and that is what H.R. 4526 does.

And just from my personal view, we certainly want to focus on those groups, but I think it is also important that we have programs available for anyone who needs help economically. Some of those are African American, but they may be Hispanic; they may be Caucasian, whatever

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they may be. We want opportunities for them, and that is what this bill is all about. And I really look forward to the testimony of those of you on the panel because you have the expertise to help us get a better understanding of this.

And with that, I would like at this time to introduce the author of the bill, Mr. Rush of Chicago, for his five-minute opening statement.

Mr. Rush. I want to thank you, Mr. Chairman. I want to also commend you for not only cosponsoring H.R. 4526, but also for holding this important hearing today on an issue that is a high priority for me and for my constituents.

Mr. Chairman, you and your staff have been very, very gracious in working with my staff to make this hearing a reality, and I wanted to publicly express my sincere appreciation for your work and for your involvement, for your commitment. Mr. Chairman, I want to thank all the members who are present for taking the time out. I know there are other hearings going on, and their time is very precious to them, and their schedules are tight. I want to thank them, therefore, for taking the time out to be at this hearing. I want to thank all the participants, expert witnesses.

As you know, Mr. Chairman, since taking over as ranking member of this subcommittee, one of my top priorities has been to increase opportunities for minorities within all sectors of the energy industry.

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We have come a long way in this regard as evidenced by the distinct panel of stakeholders who have worked with my office from the beginning on drafting this bill. While there is still much work to do to turn potential into reality, I am very pleased to see that we have some of the top minds in the country testifying before us today representing the Federal Government, representing business, the energy sector, and nonprofits.

Mr. Chairman, the purpose of this bipartisan bill is to provide a pathway to employment for minorities and other historically underrepresented communities in the energy sector. This bill outlines a comprehensive strategy for initiating collaboration between the Departments of Energy, Education, and Labor, as well industry, schools, communities and colleges, universities, labor unions, workforce development organizations, and other stakeholders in order to engage, inform, train, and recruit minorities for energy jobs of the present and for the future.

The fact of the matter is, and this is in the best interests of our constituents of energy and our national economy to engage women and the minority community because as two recent API reports that Mr. Gerard references in his testimony tell us over half of the workforce was in the oil and gas industry, specifically will retire or leave within the next 5 or 10 years, and they will need these very same

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communities, this very same community workforce, to help replace those workers.

Mr. Chairman, I applaud Secretary Moniz for his outstanding leadership in developing the Minorities in Energy Initiative following both public and private conversations we have had discussion on this important topic. Under the leadership of Director Harris, who we will hear from today, I have every confidence that if all of us continue to work together, we will see positive, tangible results in moving this agenda forward.

Mr. Chairman, this is a very important matter. Again, I want to thank you for your participation. I think the American people owe you a sense of gratification and a sense of thanks because you are, indeed, in a bipartisan manner, moving a critical issue forward with this hearing.

Mr. Chairman, if I have any additional time, I want to yield to the gentleman from Texas for whatever time I have remaining.

Mr. Green. Thank you, Mr. Chairman. I will be brief and put my full statement in the record. I want to thank both the chair and Ranking Member Rush for crafting this legislation. I am proud to be an original cosponsor. The industries I represent have complained for years about workforce shortages. In East Houston, Harris County, Texas, if we were able to recruit every journeyman electrician in the

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country, we would still have a shortage. Our economy is part of the country rapidly expanding because of the development of the Eagle Ford Shale in the Permian Basin, and our workforce in Texas, diversity is a reality. It is also a necessity. Recently, ExxonMobil and the Texas Gulf Coast Community College Consortium are addressing the workforce needs, and they provided funding for our community college, and San Jacinto College in our district is one of those colleges.

In fact, the diversity in San Jacinto College actually is 46 percent of their students that attend San Jacinto College are Hispanic, in those skills, computer training, electricity, machining, welding, pipe fitting, and other skills. Thank you, and I look forward to hopefully passing this bill.

Mr. Whitfield. Thank you very much, and our chairman of the full committee, Mr. Upton, had a conflict and is not here. Is there anyone else on our side of the aisle that would like to be recognized for a comment? If not, at this time, I would like to recognize the gentleman from California, Mr. Waxman, for a 5 minute opening statement.

Mr. Waxman. Thank you, Mr. Chairman. I am very pleased for holding this hearing on this bill authored by the ranking member of this subcommittee, the 21st Century Energy Workforce Development Jobs Initiative. Mr. Rush's bill addresses a major challenge for our Nation to ensure that all Americans and especially minorities have the skills

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they need to carry out the jobs available today and in the future. Specifically, this bill aims to prepare minority workers for the wide-ranging job opportunities in the energy sector.

The U.S. energy industry is in a period of transformation and growth. Steady advances in critical energy technologies and the resulting cost reductions are generating new businesses and job opportunities across the country. These jobs are being filled by workers with a range of skills and educational levels from solar panel installers and wind turbine technicians, to engineers and line workers in electric vehicle factories. Mr. Rush's legislation aims to ensure that these opportunities emerging throughout the energy industry will also be available to minority workers and minority-owned businesses.

Mr. Rush has been a longstanding and tenacious champion for helping minority communities gain access to the full range of career opportunities in the energy field, particularly clean energy jobs. In 2009, in the Waxman-Markey Energy Bill, Mr. Rush successfully pushed to include funding for the proposed "low-income community energy efficiency program." This program would have provided financing for minority-owned businesses and community organizations to deliver energy efficiency and renewable energy improvements to low-income communities.

I strongly supported this effort. It would have created good,

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clean energy jobs for local residents while also helping low-income families save money on the energy bills through energy efficiency upgrades.

I am also proud to support Mr. Rush's most recent proposal. This bill would launch a comprehensive new program to create a pathway starting at the elementary school level for minorities to work in energy-related jobs. It would facilitate a coordinated effort among the energy industry, educational institutions, and government, labor unions, to help bridge the gap that now exists between the many minority workers and the job opportunities in the energy industry.

This is an area of tremendous opportunity if we can prepare workers with the skills they need. We are in the midst of an energy revolution, and some of the most exciting developments are occurring in clean energy. Since 2010, the solar industry has grown at a breakneck pace and added 50,000 new jobs across America. In 2013, there were over 142,000 workers throughout the solar industry supply chain in the United States. Nearly half of these were in solar installation jobs which earn over \$23 per hour on average. These are good living wage jobs that cannot be outsourced.

The wind industry has also grown rapidly in the United States over recent years. Texas ranks first in the country for wind power, installation, and wind industry jobs, while California ranks second.

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The wind industry has injected more than 11 billion into California's economy, and 23 billion into the Texas economy. These investments have created jobs and a stronger, more diverse tax base.

And as States move forward to implement the EPA's Clean Power Plan in coming years, job opportunities in the clean energy sector will expand even more rapidly, but creating jobs isn't enough. We also have to make sure that all Americans have the training and skills they need to compete for these jobs. Congressman Rush has put forward a well-developed bipartisan proposal to ensure that minorities, too, will benefit from these new jobs in energy. Today's hearing will provide valuable information on how this program can help translate opportunities into real jobs for minority workers.

Thank you, Mr. Chairman. I yield back my time.

Mr. Whitfield. Thank you, and that concludes our opening statements, so at this time, I will be calling on the members of the panel to give their opening statements.

And the first witness that we have this morning is Ms. LaDoris Harris, who is the Director of the Office of Economic Impact and Diversity at the Department of Energy, and, Ms. Harris, you will be recognized for five minutes for your opening statement, and thanks for being with us.

STATEMENTS OF HON. LADORIS "DOT" HARRIS, DIRECTOR, OFFICE OF ECONOMIC

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IMPACT AND DIVERSITY, UNITED STATES DEPARTMENT OF ENERGY; HARRY ALFORD, PRESIDENT/CEO, NATIONAL BLACK CHAMBER OF COMMERCE; CASEY BELL, SENIOR ECONOMIST WITH THE AMERICAN COUNCIL FOR AN ENERGY EFFICIENT ECONOMY; PAULA JACKSON, PRESIDENT, AMERICAN ASSOCIATION OF BLACKS IN ENERGY; AND JACK GERARD, PRESIDENT/CEO, AMERICAN PETROLEUM INSTITUTE.

STATEMENT OF LADORIS HARRIS

Ms. Harris. Thank you, Chairman Whitfield, Ranking Member Rush, and the distinguished members of the committee. I am pleased to be before you today to discuss the status of the Department of Energy's Minorities in Energy Initiative and the Workforce Development Initiatives.

I was nominated by the President as the Director of the Office of Economic Impact and Diversity at the United States Department of Energy and confirmed by the U.S. Senate on March 29 of 2012. As an electrical engineer by training, I bring 30 years of global private sector management and leadership experience in the energy sector. Before coming to the Department of Energy, I was cofounder, president and CEO of Jabo Industries, a minority, woman-owned management consulting firm concentrating in the energy, information technology, and healthcare industries. I also served as an executive as General

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Electric and held a number of leadership positions at GE Energy and industrial systems businesses.

Prior to GE, I was an officer and vice president of operations for production for ABB Services, Inc. I spent 12 years as a field service engineer and services manager for Westinghouse Electric Company.

The Office of Economic Impact and Diversity at the Department was established in 1979, and with a director appointed by the President and confirmed by the Senate to advise the Secretary on the impact of energy policies, regulations, and other actions of the Department on Minorities and Minority Business Enterprise to ensure minorities can participate fully in the Department's energy programs.

The policy includes insurance that DOE can provide minorities with information, technical assistance, support, loans, business analysis, and targeted outreach. In 2013, as I mentioned earlier, Secretary Moniz launched the Department of Energy's Minorities in Energy Initiative, and this initiative was to engage the minority communities in the energy sector. Because of my office's mandate and successful history working with minority communities, Secretary Moniz asked me to task this initiative. The initiative is a public-private collaboration aimed at increasing minority participation in the energy sector through engagement in science, technology, engineering and

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math, education, and workforce development, energy economic development, as well as climate change. Through outreach, industry partnerships, and industry data analysis, we seek to harness the richness of America's diversity to actually develop and sustain talent. One of the areas for timing for this initiative could not be better with the fact that energy is the third largest industry in the U.S.

MIE, as it is referred to, would empower and prepare businesses, communities, schools, and individuals to benefit from the technical, financial assistance, and workforce, and energy literacy as well.

Through the initiative we have sustained a platform which should include a number of ambassadors across the industry as well as those in the education and economic industries as well. Some of the leading members of this, or ambassadors include the Ranking Member Bobby Rush, Senators Mary Landrieu and Lisa Murkowski, Congresswoman Eddie Bernice Johnson, Congressman Joe Garcia. Also on the panel with us today, Jack Gerard is also one of our ambassadors. We have a few ambassadors as well that has been key, past former EPA administrator, New Jersey Governor Christine Todd Whitman is also one of our ambassadors.

If we look at the areas that we are focusing in for STEM education and workforce development, we are working very closely with the Obama administration even in My Brother's Keeper Initiative that we want to focus on as well. One of the areas that we really are looking forward

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to with MIE is not only in working with some of the minorities serving institutions which support the educational outreach that we have.

One of the second areas that we focus on, clearly the economic impact development, because of the \$6 trillion industry that we have in energy, we are making sure we engage minority businesses as well. In this area we have a MOU, for example, with the Department of Commerce, with minority business development agency that we will establish in 2013, and collectively we are working very closely with the businesses to support this.

And finally in the climate change area, we have engaged with the -- aligned our focus with President Obama's Clean Action Plan, and we support all the necessary investments for clean energy technology.

So in conclusion, we will be looking forward to working with the committee and all that you have done in support of the Department's Minorities in Energy Initiative, focusing on your bill for energy workforce development. Thank you very much.

Mr. Whitfield. Thank you, Ms. Harris.

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[The prepared statement of Ms. Harris follows:]

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Mr. Whitfield. And at this time, our next witness is Mr. Harry Alford who is the President and CEO of the National Black Chamber of Commerce. Mr. Alford, thank you for being with us today. We look forward to your testimony. You are recognized for 5 minutes.

STATEMENT OF HARRY ALFORD

Mr. Alford. Chairman Whitfield, Minority Leader Rush, and distinguished members of the committee, thank you for inviting the National Black Chamber of Commerce to participate in this most important hearing. The NBCC proudly represents the fastest growing segment of the American economy, black-owned businesses. When we were incorporated in May of 1993, the U.S. Census Bureau stated that there were 300,000 black-owned businesses doing \$30 billion in sales annually. Today the U.S. Census Bureau states that there are 1.9 million black-owned businesses doing over \$137 billion annually. This fantastic growth has swelled our membership and has made us the largest black business association in the world. We have over 170 local chapters of which 70 percent are located throughout the United States. Our database of black-owned firms exceeds 60,000 within the United States.

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Likewise, there has been an unprecedented growth in this country's energy industries in the last decade. The development and production of natural gas and oil has increased dramatically with the widespread use of hydraulic fracturing. The U.S. has moved from being a country that imports natural gas to one that has the capacity to export it. In fact, natural gas production in the U.S. is expected to grow increasing 56 percent between 2012 and 2040. This type of growth directly translates into jobs, often well-paid jobs with Fortune 500 companies. In fact, according to the U.S. Energy Information Administration, jobs in the oil and gas industries have outpaced all others in the private sector. Without a doubt, minorities should be competing and landing these jobs.

According to a March 2014 IHS study, the U.S. oil and gas industry and the petrochemical industry together employed a total of 1.2 million people in 2010. Of those jobs, African American workers held 98,000 of them in 2010, accounting for 8.2 percent of the total employment. According to the same IHS study, there will be a total of 1.3 million direct job opportunities over the period of 2010 to 2030 in the oil and gas and petrochemical industries. Of those job opportunities, IHS projects that African American and Hispanic workers will account for nearly 408,000 jobs, or 32 percent in 2030. IHS also estimates that African American and Hispanic workers are projected to make up nearly

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20 percent of the management, business, and financial opportunities through 2030.

One of the most significant ways that we as a minority community can take advantage of the employment boom and energy sectors is to support local development of energy-related projects and development within our local communities. A good example of such a partnership is the Mississippi Power Company's construction of a power plant in Kemper County, which began in 2010. The power plant will have carbon capture and sequestration technology, providing for lower emissions generation. The facility is projected to create more than 12,000 construction jobs and 1,000 permanent jobs, generating more than \$75 million in State and local tax revenue. The Kemper facility has contracted with 22 minority-owned businesses for \$96.7 million in business opportunities.

Summation, the purpose of this bill is to provide a pathway to employment for minorities and other historically underrepresented communities in the energy sector. This bill outlines a comprehensive strategy for initiating collaboration between the Department of Energy, Education, and Labor, as well as industries, schools, community colleges, universities, labor unions, workforce development organizations, and other stakeholders, in order to engage, inform, train and recruit minorities for the energy jobs of the present and

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future.

The Secretary of Energy shall: Make the objective of educating and training minorities and other workers for the 21st Century jobs a national priority; collaborate with the Secretary of Education or his designee and the Secretary of Labor or his designee to develop guidelines for educational institutions at all levels, including K through 12, community colleges, undergraduates, graduate, postgraduate universities, that would help the energy workforce in the 21st century; work with organized labor and community-based workforce organizations to help identify candidates, including from historically underserved communities such as minorities, women and veterans, and to enroll into training and apprenticeship programs, leading to full union membership. I commend Representatives Rush, Whitfield, and Johnson on their introduction of this important legislation. The bill provides for an overall strategy to connect representatives from industry, education, and government and other stakeholders in an effort to engage, inform, train, and recruit minorities for the energy jobs of the present and the future.

With these types of efforts, we can educate, train and employ African Americans and other minorities so that they too can enjoy the economic benefits of the American Energy Bill. Thank you.

Mr. Whitfield. Thank you, Mr. Alford.

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[The prepared statement of Mr. Alford follows:]

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Mr. Whitfield. And our next witness is Ms. Casey Bell, who is a senior economist with the American Council for an Energy Efficient Economy. Thank you for being with us, and you are recognized for 5 minutes.

STATEMENT OF CASEY BELL

Ms. Bell. Chairman Whitfield, Ranking Member Rush, members of the committee, thank you for the opportunity to speak to you today about the need for workforce development and training in energy and related industries. My name is Casey Bell. I am a senior economist with the American Council for an Energy Efficient Economy, commonly known as ACEEE. I am testifying on behalf of Jim Barrett, our chief economist. ACEEE is a nonprofit research institute dedicated to advancing energy efficiency. For over 30 years, we have been a trusted source of information on end use efficiency technologies and policies. I am here to talk to you about the training and workforce development needs for the energy efficiency industry.

First, just to make sure we are all talking about the same thing, I will spend a moment defining energy efficiency. Though often conflated with energy conservation, efficiency is distinct. It is not

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about turning down the thermostat and putting on a sweater or otherwise doing without. Instead, efficiency is about doing more with less, going further on a gallon of gasoline, keeping your home warm while using less fuel, using precision timing to produce high quality products while cutting costs.

Unlike other energy sources, you can't touch, smell, or see energy efficiency. You can't burn it or put it on the electric grid. That makes efficiency a bit different than other energy sources. However, the important thing to keep in mind about energy is that is no one really consumes energy for its own sake. We don't necessarily buy gasoline because we like gasoline. We buy it because we need to go places, and our cars use gasoline to take us there. We don't eat electricity, but we need it to store and prepare food. We don't consume energy per se, rather we consume energy services, mobility and access, heating and cooling, the ability to use our computers for work, and television to relax.

So while efficiency doesn't deliver energy, it delivers energy services, and it is just as important to the economy as physical energy sources are, perhaps more so.

In 1970, the U.S. GDP, the value of all the goods and services we produce, was a little over \$5 trillion in today's terms. By 2012, that had more than tripled to over 16 trillion, adjusting for inflation.

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In 1970, our economy consumed about 68 quadrillion BTUs worth of physical energy. By 2012, that grew to just under 100, an increase not of 300 percentage like GDP, but of only 41 percent. If we consumed energy in 2012 the same way we consumed it in 1970, we would have consumed over 220 quadrillion BTUs. What this means is that over that time frame, the majority of the increase in demand for energy was not met by increasing the supply of energy, but rather by energy efficiency, as shown in the figure 1 in Jim's testimony.

Without energy efficiency, energy consumption would be more than twice as high as it is today. By that measure efficiency has been the single most important fuel of the past 40 years. Not only is energy efficiency a critical resource for economic growth and productivity, it is an important source of employment. Unfortunately, just as efficiency itself can't be seen, the energy efficiency industry is also difficult to identify.

Unlike industries such as oil and gas extraction, electricity generation, or automobile manufacturing, there is no clearly delineated efficiency sector. Though difficult to identify and measure, energy efficiency production and energy efficiency jobs are spread throughout the economy. In the manufacturing sector, energy efficiency plays an important role in developing new, lower cost, and more efficient appliances, cars that get better gas mileage, and

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improving industrial processes that allow us to make more of these and other priorities with less energy than ever. Investing resources in making homes and offices more energy efficient creates jobs in construction and the industries that make the equipment and materials needed for the job.

As a simple measure, every \$1 million spent on energy as a whole supports about four full-time jobs directly and through the supply chain. Investing that same amount of money in the construction sector to make homes and offices more efficient would support about 12 jobs, not even taking into account the beneficial impacts of increased productivity, reduced pollution, and increased competitiveness. An analysis ACEEE performed of the Energy Savings and Industrial Competitiveness Act of 2013, found that the investment in efficiency that bill would drive would support a net increase of over 100,000 jobs per year, in addition to the jobs the energy efficiency investments also create.

We also have an analysis of EPA's Clean Power Plan that indicates by 2030, the rule could induce over \$625 billion of investment in various energy efficiency industries and behaviors and create an average of over 400,000 jobs per year, both directly and throughout the economy.

We expect increasing growth to necessitate a wide range of

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training and educational needs. Community colleges and union-based training programs in particular can play a central role in providing hands-on vocational and practical training in a number of skilled and semiskilled occupations directly related to the energy efficiency. I am not an expert on designing training programs, although my colleague has had the opportunity to tour skilled training programs in plumbing, pipe fitting, heating, air-conditioning, and related systems with an eye on increased energy efficiency. To the extent that people imagine these occupations to be simple or unskilled, we can say that they are wrong. In many cases to do this work right requires highly specialized skills and well-designed, targeted training programs, neither of which happen by accident.

I will leave it to those with more knowledge and expertise to discuss how to deliver that training to traditionally underserved communities, but I will state what seems obvious, that participation in these and other growing energy industries requires participation in appropriate training and education programs. To the extent that the existing workforce is not representative of our working age population as a whole, that disparity is likely to persist absent focused efforts such as those proposed in the 21st Century Energy Workforce Development Jobs Initiative Act of 2014 we are discussing today.

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Thank you again for the opportunity to speak, and I am more than happy to answer any questions you may have.

[The prepared statement of Jim Barrett follows:]

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Mr. Whitfield. Thank you very much. Our next witness is Paula Jackson, who is the president of the American Association of Blacks in Energy, and thanks for being with us, and you are recognized for 5 minutes, Ms. Jackson.

STATEMENT OF PAULA JACKSON

Ms. Jackson. Good morning, Chairman Whitfield, Ranking Member Rush, and all the members of the committee. Thank you for giving me the opportunity to testify before you today. My name is Paula Jackson. I am the president and CEO of the American Association of Blacks in Energy. We are a national association of energy professionals founded and dedicated to ensure the input of African Americans and other minorities into the discussions and developments of energy policy, regulations, R&D technologies, and environmental. Our membership of 1,500 energy professionals who work in every sector of the industry are committed to building a cadre of young African American leaders for this industry.

The association fully supports H.R. 4526, and for more than 35 years, we have been working diligently to educate and inform our communities about the opportunities in the energy industry. While we

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have had some success, we recognize that there is a lot more to be done. This bill brings together all the key stakeholders to develop a curriculum and framework which will significantly move the needle at a time where our Nation's economy is growing, and with that growth, more opportunities become available.

Changes in the industry from grid modernization, higher demand for electricity, increased domestic oil and natural gas resources, an aging workforce, and adoption of new technology, along with the changing demographic in this country, has made the industry look very closely at its workforce pipeline. In response, the electric and natural gas industry formed the Center For Energy Workforce Development, which is an organization that works with utilities to develop solutions for the coming workforce shortage in the utility industry. And the oil and natural gas industry has made workforce pipeline, and more specifically, inclusion of women and minorities in the workforce a priority as well.

As you can imagine, for an organization like mine, this is great news. We aren't spending time trying to convince the industry to be more inclusive. Instead we are spending time looking for opportunities to collaborate and address this problem. Increasing the participation of minorities has been at the core of our work for 37 years, and as an organization, I want to share with you some of the

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things that we have been doing to move things forward. Our first is our scholarship program.

Through the AABE scholarship program that was established more than 30 years ago, we encourage young people to study in the STEM disciplines and pursue a career in energy. As a result of that work, more than a million dollars in scholarships has been granted to students around this country. And as the industries needs have changed, our program has changed. One change is that we have expanded this program to include students who are going to major in business. The other change is that some students will go to 2-year institutions as opposed to 4-year institutions, and so we are really trying to find ways to take advantage of these opportunities and bring students where they are into this industry.

Our chapters offer specific programs and innovative collaborations to get students to think about STEM and this industry. For example, our New York chapter has partnered with NYU Poly, Con Ed, National Grid, and they offer a Summer Energy Academy every year for middle school students. That 6-week program introduces students to careers in the industry by having them do research and develop their own energy projects. And just this past weekend I had the opportunity to visit with a group of high school students who were working at Atlanta on developing an energy app for our association. It provided a

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wonderful opportunity to talk with students who were thinking about video game design as energy for an opportunity for those types of skills.

Every October we have Black Energy Awareness Month where all of our chapters offer interactive learning activities for local students to broaden their knowledge about the energy industry. And then we do community outreach. This year in partnership with Hispanics in Energy, the DOE's MIE initiative, and API, we have kicked off an Energize series: A Community Conversation About Energy, Opportunity, and Workforce Readiness in Diverse Communities. And this eight-city tour has brought together industry leaders, community stakeholders, policymakers, and others to discuss opportunities in industry and the challenges which make accessing these opportunities difficult.

To date, we have hosted conversations Bakersfield, Canton, Chicago, Denver, Las Cruces, and Philadelphia. Tomorrow we will be in Charlotte, and next month in Detroit.

And finally, as an association we are always looking for opportunities to collaborate with other organizations. Most recently we signed an MOU to belong to an organization called Changes, which is the coalition of Hispanic, African, and Native Americans for the next generation of engineers and scientists. And through that collaboration, we are not only able to better understand the challenges

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that minority students face in pursuing STEM disciplines, but we are able to educate those people, those academics and others, about the opportunities that the industry offers.

And so what I would like to say is that outreach, scholarship, and collaboration are key tenets to AABE's work in increasing the participation in this industry. We know the industry is a driver to our economy, and working in this industry can change lives and move families into the middle class. And this legislation is critically important to ensure that all Americans will have the opportunity to participate.

And finally, I would just like to say on a personal note thank you for your leadership and thoughtfulness around this. I started in this industry 25 years ago, and as a young African American woman who was a marketing major and fell into this industry, I applaud you for thinking about how we can direct students more so that they don't fall in like I did, but that it is a clear choice. I look forward to your questions.

Mr. Whitfield. Thank you very much, Ms. Jackson.

[The prepared statement of Ms. Jackson follows:]

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Mr. Whitfield. And our next witness is Mr. Jack Gerard, who is the CEO of the American Petroleum Institute. Thanks for being with us today, and you are recognized for 5 minutes.

STATEMENT OF JACK GERARD

Mr. Gerard. Thank you, Mr. Chairman, and Ranking Member Rush, and other members of the subcommittee. It is a real pleasure to be with you this morning. As mentioned, I am Jack Gerard, the president and CEO of the American Petroleum Institute. We represent all facets of the oil and natural gas industry in the country which supports about 9.8 million U.S. jobs and constitutes about 8 percent of our domestic economy. I am pleased today to be here with many of our partners, with Paula and Harry and Dot, and I might say our friends, as we look at these issues more closely and figure out a better way to serve the American people generally, particularly in light of the American energy renaissance that we are experiencing today.

API's 600 members make up all aspects of the oil and gas industry from the large integrated companies as well as exploration and production, refining, marketing, pipeline, marine businesses, all the way down to our service and supply firms. Our extensive network of

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over 30,000 vendors, suppliers, and contractors create and support jobs in every community in the country, by and large, and in most congressional districts.

The unprecedented opportunity created by America's 21st century energy renaissance, which is a direct result of technological advancements in the oil and gas industry, is a unique opportunity for all Americans. If we seize this moment in our history and work together on energy policies that promote the safe and responsible development of our Nation's enormous energy resources, our industry will not only create and support millions of well-paying jobs far into the future, but also make America a global energy superpower for many generations yet to come.

To better understand the scope and reach of this economic opportunity our industry could provide the Nation, API commissioned IHS Global to examine potential job opportunities through 2030. The study has been cited by other members of the panel here this morning. The report, which is entitled, Minority and Female Employment in the Oil & Gas and Petrochemical Industries estimates that over 950,000 jobs, job opportunities, could be created by 2020 and that nearly 1.3 million job opportunities through 2030 across the country in just our oil and natural gas and petrochemical industries. These are good-paying careers that pay well above the national averages.

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The jobs the oil and gas industry creates will require people with a range of skill sets, training, and educational achievement levels, meaning that the opportunities we offer are not limited to a few highly skilled or specialized workers within a particular region of the country. What the report makes clear is that this Nation will not only be able to fulfill its potential as a global energy leader, but that we will not be able to fulfill our potential without more hands on deck, particularly minority and female workers.

The report estimates that there are nearly 408,000 job opportunities that could be filled by African American and Hispanic workers, with 185,000 of those being filled by women. African American and Hispanic workers are projected to make up nearly 20 percent of new hires in management, business and financial jobs through 2030. These estimates are based on current and projected trends and factors such as labor, workforce participation rates, educational attainment, and should be considered a floor, not a ceiling, for job opportunities.

In order to be competitive for all 1.3 million jobs, certain education and workforce training must occur. That is why we applaud the leadership, Mr. Rush, Chairman Whitfield, and others, in introducing H.R. 4526, the 21st Century Energy Workforce Development Jobs Initiative Act of 2014, and I want to thank other members of the subcommittee and other members of the House who have already

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cosponsored this important legislation.

H.R. 4526 will help achieve our shared goal of fuller participation by more Americans in the 21st Century American energy renaissance by streamlining the coordination between the various sectors within the energy industry and the Federal Government, creating guidelines for training, encouraging STEM education that will expand the pool of qualified workers at all levels, and by working with State energy offices to provide high school counselors and regional job opportunities. The bill will also enhance a productive working relationship between the North America building trade unions who have been an invaluable partner with us in the oil and gas industry.

We now have a labor management committee of 15 unions that we work with often to create job opportunities and specifically training opportunities to prepare this workforce of the future.

Put simply, the bill helps bring our Nation closer to the day when the tremendous job creation and economic growth brought about by America's vast energy resources are no longer projections, but are, indeed, reality. We strongly support the bill. We appreciate the bipartisan leadership, and we look forward to working with you on it. Thank you.

Mr. Whitfield. Thank you very much, Mr. Gerard. We appreciate the testimony of all of you.

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[The prepared statement of Mr. Gerard follows:]

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Mr. Whitfield. And at this time, I would recognize myself for 5 minutes of questions.

Ms. Harris, as the Director of Economic Impact and Diversity, you are already working in this area of trying to encourage opportunities for minorities in the fields of energy. Has your department had the opportunity to review this legislation in very much detail at this point?

Ms. Harris. Yes, we have.

Mr. Whitfield. And do you all support it, or do you have a process in which you make a determination that you will formally support a piece of legislation?

Ms. Harris. The Department has not taken a position on the legislation, but I can say that is appreciation from the Department with the Ranking Member Rush's leadership and this incredible, important topic for all of us. The goal and objectives of the legislation are very much consistent with what the Department focuses on, particularly with a mission of minorities in energy. Having congressional engagement at the highest level such as what you have done is very important to the Department.

Mr. Whitfield. Okay. And from your practical experience from where you are working now, you view that this would be quite helpful

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to you in encouraging more minorities in the energy sector?

Ms. Harris. This bill will, for sure, support minorities in the energy sector, as we talked about earlier with some of the other panelists, where we have them in this country, we have to have participation by all; and with the growth of minorities for the demographics of this country, we actually have to support all women, minorities, to participate in order to support the energy sector.

Mr. Whitfield. I was just curious. You have your degree in electrical engineering.

Ms. Harris. Yes.

Mr. Whitfield. And there are certainly a lot more men in engineering than women, but as a young girl growing up, how did you become interested in electrical engineering?

Ms. Harris. Actually it was a field trip I took in my tenth grade class. I was planning on being a English teacher like many of my siblings. When I took this field trip to Savannah River, which is actually one of our national labs, and it was told to me how important it was opening for women, minorities, the money, the travel, and all those things that a young high schooler would be interested in. So as a result, I actually switched over and became interested. Went to the University of South Carolina as an engineer, and was the first African American woman to graduate from the Electrical Engineering

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Department at the University of South Carolina. So I have loved it ever since.

Mr. Whitfield. And how old were you when you took that trip?

Ms. Harris. I was 10th grade, so what, that made me --

Mr. Whitfield. So up until the 10th grade, you were going to be an English teacher and made the switch.

Ms. Harris. Yes.

Mr. Whitfield. That is encouraging.

Ms. Harris. Actually it was my chemistry teacher, Ms. Crumm. I will never forget her.

Mr. Whitfield. She encouraged you.

Ms. Jackson. Yes. That is why teachers are so important.

Mr. Whitfield. Absolutely. So, Ms. Jackson, you said that your organization had actually reviewed the legislation. You actually support it?

Ms. Jackson. Yes.

Mr. Whitfield. How old is your organization?

Ms. Jackson. 37 years.

Mr. Whitfield. Who started it?

Ms. Jackson. It was started by a gentleman named Clark Watson out of Denver, Colorado, and incorporated in Colorado in 1977, and then in D.C. in, I think, 1980.

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Mr. Whitfield. Mr. Gerard, you touched on this, and, in fact, all the witnesses touched on it, about the tremendous opportunities that we do have in energy because of the shale finds and the changes in efficiency and renewables and everything else. It is really a dynamic sector. Do you all have programs already in which you work with minorities to encourage participation in the sector?

Mr. Gerard. We do, Mr. Chairman. In fact, we are ramping those up in collaboration with Paula, with Dot, with Harry and others, as we go around the community, that was referenced earlier, what we call our Energize program. We have got an eight-city tour. We just agreed to add two more cities to that, where we are literally going into these areas, and Mr. Rush is well aware of this. We did one in Chicago, where we go in and we talk about these opportunities, hopefully the things that inspired Dot to go into electrical engineering, and we as an industry go in. We bring the community together. We educate around the industry and the job opportunities. We bring our member companies in where they can sit up and talk directly with individual students as well as others.

We have a few other things we are doing. For example, we have recently launched a portal that is a bilingual portal in Spanish and English. It now has over 1,000 companies, community colleges, institutions, et cetera, where individuals can go online and look at

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the area where they live and find opportunities within the oil and gas industry.

So we are taking this very seriously, and I hope you see by the report that we have put out now that we see this as key to the changing demographic in the country, not only the workforce turnover you mentioned earlier where we will see close to 50 percent of that workforce turn over in the next 10 years, but the new job creation as part of that 1.3 million number. Six, 700,000 of those are new jobs. So we have got to prepare that workforce.

The last thing I would just say is when you look at that 1.3 million, about 63 percent of those fall in what we would call the traditional blue collar areas. So one of the beauties of the oil and gas industry is we span the entire continuum from the highest trained, highest skilled Ph.D.s, across the front to skilled, semiskilled, et cetera. So we have opportunities across the entire country, across our regions, and we want to make a big push, particularly in the minority community now, to train that workforce for the future.

Mr. Whitfield. Well, thank you. And my time has expired, so at this time I will recognize Mr. Rush for 5 minutes.

Mr. Rush. I want to thank you, Mr. Chairman. Mr. Alford, we have talked a lot about jobs and the relation to the energy sector, but we don't spend enough time talking about business opportunities, and your

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organization is comprised of millions of business in the Nation. What opportunities can you foresee if this bill were to pass for business expansion and business creation for minorities and women?

Mr. Alford. Great opportunities. The National Black Chamber of Commerce works pretty well with the oil and gas industry and coal. We have partnerships with Exxon, Chevron, Marathon, and others. We look at growth and that our strong suit is engineering and construction amongst our membership which applies to at the oil industry, the energy industry. So I think, and I am certain that the opportunities are there, the man is there, and what we have to do is match our talent with these opportunities.

I know one of the largest construction companies in the country, their CEO told me he would hire graduates from Prairie View and Tuskegee Institute without interviewing them. The demand for them was so great. We talked about STEM, Science, Technology, Engineering and Math. HBCUs were doing that before it was cool. All the A and M colleges and universities provide product out there, and I think that it would behoove us to beat the drum and let everybody know that the talent is there. Let's match it with opportunities.

Mr. Rush. Director Harris, give us a graphic in terms of how you foresee -- if this bill were to become law -- how do you foresee the Department of Energy and your focus, how do you see that really

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operating? How would that impact your day-to-day operations at the Department of Energy?

Ms. Harris. My office in particular, which is focused on minorities in energy, we look at everything from community impact, business development, as well as educational support. So this bill would clearly be in parallel with a lot of things that we do in concert already. It would allow us to reach more of those communities, more of those students, and more of those businesses. We work in collaboration with other agencies, of course, and it will feed of course into the support we get from the Department of Commerce, for example, Department of Labor. It would simply augment and support and further develop what we are currently doing, which is important, because we all have to do so much over the next few years for all of us to catch up with the demand for the energy industry.

This industry, 6 trillion, as I mentioned earlier, is what is seen across the globe for energy development. If we try to hire every engineer from not only minority-serving institutions or even the majority schools, it is going to be a fight for this country just to be able to catch up, so it would be critically important to supporters.

Mr. Rush. Mr. Gerard, you and I have had a number of conversations throughout the few years that we have known each other, and your report was very insightful, pivotal, and I enjoyed reading

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it, even when I am ready to go to bed. I like to read it and just imagine that --

Mr. Gerard. I will send you another copy if you need -- I will produce another one and let you read it.

Mr. Rush. All right. Can you discuss with this subcommittee the risk of the energy sector? And if we don't proactively train and prepare the 21st century energy workforce, I mean, what is at stake? What are we risking by not implementing the spirit and the tenets of this bill? What is at stake?

Mr. Gerard. First of all, Mr. Rush, I think it is a great question. We need to think about it in a broader context as well. Let me suggest there is probably at least two dimensions we ought to think about in terms of risk. The first one is where we position ourselves in the global economy and geopolitics of the world today. It is fascinating when you see the various unrest around the world, you can find underpinning a lot of that conversation to be tied to energy. We are in a very unique opportunity now as a Nation that we have never been in before. We have moved from scarcity to abundance literally overnight.

And by doing that we have got to catch up with that mind set and actually move this quicker, so I would suggest the first risk is a global risk as a Nation. We are now the world's number one natural gas

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producer. No one would have predicted that 5 years ago. Some have said we are already there. Others believe we are about to be the world's number one oil producer, surpassing Saudi Arabia.

So when you look at what is going in Russia; you look at what is going on the Middle East; you look at our European friends. I was at an event over the weekend with many ambassadors where they are all begging me, saying you have got to send us your energy. You send us your energy. It changes that geopolitical dynamic, so I think that's the first risk.

The second one I would suggest is just our opportunity as a Nation to put our people to work. If you look at the average compensation of the oil and gas industry today in the private sector, it is about 90-, \$96,000 a job. That compares to \$49,000 on average for the rest of the Nation. These are not just jobs. These are careers. These are what give the Dots of the world, if you will, a huge opportunity. So our risk is that if we don't engage this process, help bring our people the skill set and focus on the policies necessary to achieve this energy renaissance, as a Nation, we run the risk that we are going to frankly hurt our economy and hurt our people in addition to our world standing.

Mr. Rush. Thank you, Mr. Chairman.

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[11:00 a.m.]

Mr. Whitfield. Thank you, Mr. Rush.

At this time, I would like to recognize the gentleman from Virginia, Mr. Griffith, for 5 minutes.

Mr. Griffith. Thank you, Mr. Chairman. I appreciate that very much. I appreciate you all being here on this important issue. I am going to pick on Mr. Alford and Mr. Gerard for just a minute and throw you a little bit of a curve ball.

We are working on a resolution today on the floor related to supporting the Ukraine. And in paragraph 15 of that resolution, in the "Resolved" columns, the United States Congress, if it passes this resolution later today, will call on the Ukraine and other countries to support energy diversification initiatives to reduce the ability of the Russian Federation to use its energy exports as a means of applying political or economic pressure, including by promoting increased natural gas exports from the United States and other countries.

So I would ask you, Mr. Alford, and you, Mr. Gerard: Do you believe that if we export our natural gas, we can have both a -- more

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power in the world without using our military force and create jobs for all Americans, including the minorities listed in this particular bill that we are discussing today.

Mr. Alford. I think we need all of the above.

Energy is the lifeblood of enterprise. And I think we should be the most powerful Nation in the world, which we are, and I pray to God that we will continue. And though we may walk through the valley of death, we will fear no evil because we are the toughest, strongest, richest Nation walking in that valley.

I hope I answered that question.

Mr. Griffith. I believe you did. Mr. Gerard.

And I agree with you.

Mr. Gerard, do you want to try to follow that?

Mr. Gerard. The power in the world, the answer is absolutely. In terms of creating jobs, absolutely.

Let me add a third dimension to you: Environment. There is a lot of talk out there. And this gets right back to the LNG export question. DOE has done an analysis that shows, by exporting our natural gas, not only do we wean some of our allies off other parts of the world where they would prefer to have more diversity of options; but it shows that for those that are focused on the carbon emissions, carbon emissions go down on a global scale.

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So not only can we achieve this domestically -- we are at a 20-year low in this country in carbon emissions. We are now 10 percent below where we were in 2005. Why? It wasn't because of policy. It is because the economy came back and we are producing abundant amounts of clean-burning natural gas.

So when you look at the same dynamic in the global economy -- you look at Asia, you look at Europe, and elsewhere -- you can get the same benefits. So this is a big deal that goes well beyond the traditional job creation geopolitical alliances.

Mr. Griffith. Well, and, I would have to agree. I think this is a great bill. We have to figure out how we are going to pay for everything, but we should be encouraging minorities to get into the energy sector. I believe it is a growth second for the United States for a long time to come.

Does anybody disagree with that? I want to start with Ms. Harris. Does anybody disagree this is a growth sector for the United States economy, energy?

Ms. Harris. I absolutely agree with you, for sure, yes, sir.

Mr. Griffith. Yes.

Mr. Alford. It is a game changer.

Mr. Griffith. Ms. Bell.

Ms. Bell. Yes. And particularly in clean technologies.

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Ms. Jackson. I agree with you.

Mr. Gerard. It is one of the few bright spots we have in our current struggling economy.

Mr. Griffith. Well, and, I would agree with that as well, and I believe in all of the above. Of course, I come from a district that produces natural gas and coal, so I don't ever want to pick on the folks in coal. And I am very appreciative in this resolution that coal is listed. It is not excluded as sometimes happens to be the case. And I hope that we can find new ways to use coal, even cleaner than we are using it today. It is cleaner now than it has ever been, but I think we can do better.

And I hope that we will have some bright, young, energetic minds, including our women, Hispanics, African Americans, et cetera, working on that problem as well. And I appreciate you all being here today on this important bill. Thank you so much.

And, Mr. Chairman, with that, I will yield back.

Mr. Whitfield. Thank you, Mr. Griffith.

At this time, I recognize the gentleman from Texas, Mr. Green, for 5 minutes.

Mr. Green. Thank you. Mr. Chairman. And the panel heard my opening statement.

I represent a very blue-color district in East Harris County. At

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any given time, our district has five refineries and lots of chemical plants, plus lots of service companies who hire my constituents to go out to the oil patch and work.

And being a native Houstonian, this is the best economy I have ever seen. We used to joke about in the '70s how great it was. But then we had the '80s; and Louisiana, Texas, Oklahoma was in a depression in the '80s. And the rest of the country was doing okay, I guess, but we were in terrible shape.

But our problem is -- my goal in my district is I want to make sure -- because I have a majority Hispanic district. Probably 85 percent of our student population is Hispanic, Mexican-American ancestry -- is to make sure they know those jobs are there. And so we do job fairs every year. In fact, I didn't get to go to my one this last Monday night because we had votes. But we had 500 people there with their parents, talking about job fairs earlier and then career days where we help people fill out their paperwork for colleges.

And -- but the industry supports us, and I have seen that. Our job fair we did just recently, we had 80 employers. And back in 2008 and 2009, we were lucky to get 25 or 30.

So -- but my goal is to get those young people out of my high schools. If they don't want to go to college, we have community colleges that they can go to. And, frankly, industry is helping fund

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that, so they can get those skills.

And the Secretary of Labor was in Houston about 2 weeks ago and was at the San Jacinto Community College in my area. And you can come out of high school with a high school diploma, take certification in certain skills, and make \$80,000 a year. There was one young man who had taken certification so much that he was going to get his associates degree, 2 years; and he had a job offer for \$120,000 with high school, plus community college skills training. So it is -- you know, it is a great problem to have.

Mr. Gerard, according to your testimony to the panel, accessed information pertaining to opportunities in the energy field is the number one obstacle that needs to be cleared. What steps has API taken to create outreach or provide access to the different communities to provide information about energy jobs?

Mr. Gerard. I touched on that a little earlier, Mr. Green. But let me just add, we have created, in concert with many at this table and many others -- Hispanics in Energy and some others that are key to your constituency -- we are going around the country right now on city tours. We are having similar, I guess, you would call them job fares where we are coming out, talking about the issues. We have created a bilingual portal now that has over 1,000 companies, community colleges, and others to those who speak Spanish can go on.

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But the last thing I would add that we found is very important in this industry we are learning, in addition to the quantitative work we have done as you see in this report, we are also doing qualitative group where we are holding focus groups and others and finding out what is most important to these different segments of our society.

For example, amongst the women, we are finding it is a workplace balance question where they want to be able to continue with family, but yet have opportunity. So we are nuancing our approach to make sure we are focused on what is important to these different segments.

So we have got a lot of things going, and we expect to have more over time. It won't happen overnight. But we are committed to this long-term, and we believe it is going to happen.

Mr. Green. Okay. Director Harris, like I said, we have done job fares that focus on high school students coming out at the end of May. Has DOE conducted any research or outreach to local high schools, particularly in the area of the energy, whether it be in our areas, oil and gas, and downstream jobs at the refineries or chemical plants or maybe upstream? But I know coal is also interested. But has DOE looked at that workforce issue and done research and outreach of the high schools?

Ms. Harris. Oh, absolutely. As a matter of fact, we look at K through 12, in addition to, you know, collegiate students, and then

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looking at that whole from -- I use the term from kindergarten all the way through employment. And the fact that you are from Houston, which is the most diverse city in the country -- right? -- so we have been working very closely a lot in Texas, but across the country having a lot of internships, even through the Department that we support through high school. We have a lot of energy literacy. One of our offices promote that we get into the schools. We have been working very closely with the superintendents in the schools.

And you mentioned another area, community colleges so we are working with a lot of models of students being -- once they get their high school degree, they also get certification. When they receive their high school degree, they can actually go directly into the workforce. So, absolutely, we are working very closely with K through 12.

Mr. Green. Mr. Alford and Ms. Jackson, can you explain in any more detail what you have done with leaders in the Hispanic community, in addition to this legislation, and what -- where can it be helpful?

Mr. Alford. Is this to me?

Mr. Green. Yeah.

Mr. Alford. Well, we actually have a pretty big initiative with the Hispanic community because we have chapters in Columbia and Costa Rica. We work well with the U.S. Hispanic Chamber of Commerce and

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Latino coalition.

So you will find -- and especially when we talk about New York and Miami and others, you would find a black population that their first language is Spanish.

Mr. Green. Yeah.

Mr. Alford. So it is mixed. And we are brothers and sisters, and we are working together.

Let me also compliment Houston because it is consistently the number 1, 2, or 3 best market for black-owned businesses in the country.

Mr. Green. Yeah.

Ms. Jackson. You know, we, as an association, work very closely with Hispanics in energy. So that is our sister association. And while they are much younger, what we try to do in working on some of the projects that even Mr. Gerard has talked about, is talk about cultural adaptability.

And so providing some insight to industry and organizations about how we, as African-Americans or Latinos, think about the industry, who are the people who influence the kinds of jobs we want. Are we more apt to think about colleges versus blue collar? Do we listen to guidance counselors versus our parents?

I mean, so part of kind of the learning that we have had -- and this collaboration is kind of providing that type of insight, so that

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you are not only offering the information, but you are offering it to the people who influence those who make those types of decisions.

The second piece, though, is also having an understanding of what are the challenges? Why do students not look at STEM as an opportunity? Why do they not look at energy as an opportunity? And more specifically, maybe even oil and natural gas or your traditional utilities.

People -- students don't necessarily see it as glamorous. Sometimes we as industry talk about well-paying jobs, and that doesn't resonate with young people. We talk about jobs for life; that does not resonate with young people. When you talk about global, innovative, exciting, that resonates with them.

And so we try to bring all of that together in these kind of community forums to provide a better sense of understanding, not only to the community members, but also to industry as they try to recruit.

Mr. Green. Mr. Chairman, thank you. I know -- my goal is: Minorities live next to those plants on the fence line. They ought to be able to go work there and enjoy the benefits of that, and so that is our goal.

Thank you, Mr. Chairman.

Mr. Whitfield. Gentleman's time has expired.

At this time, I recognize the gentleman from Pennsylvania, Mr.

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Pitts, for 5 minutes.

Mr. Pitts. Thank you, Mr. Chairman.

For all of the talk about growing income inequality, another great concern is a decrease in opportunities for Americans to have economic upward mobility, and this has been a key part of the American dream.

Can each of you please give a brief assessment on how the energy sector is providing opportunities to people that have technical training of some kind, not necessarily a college degree? We will start with you, Director Harris, and just go right down the line.

Ms. Harris. When you look at the employment -- when people think of the energy sector, they think it is comprised of just 4-year degree folks, engineers. But it is the supporting disciplines such as, you know, pipe fitters and all of the -- what I call community college-level work. And that is very important.

Because when I -- I was an engineer in Westinghouse, for example. When I would go onto a project, I will be a supervisor with maybe five engineers, but then I may have a crew of 15 technicians. So you need the technical supporting workforce.

So I would say, absolutely, when you look at not only the -- just the 4-year and engineering types, but everything from the business side. We work a lot with community colleges, focusing, again, that energy requires all technical support. But you need business leaders.

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You need to go into the colleges and go into the business schools, the marketing schools to actually support this whole infrastructure.

So I use a term, there is probably very few people in this country in the workforce that cannot find a job in the energy industry. So it is very broad, and it is something that we need to educate our students and our communities more on.

Mr. Pitts. Thank you. Mr. Alford.

Mr. Alford. Yeah. During the Katrina rebuild, we partnered with various oil companies and construction companies to have a training program in East Texas, Louisiana, Mississippi, and East Alabama -- West Alabama. It was surprising to see how many of those kids graduated and entered into the labor market, from pipe fitters to oil riggers.

Right now, Exxon still has that program going on in Baton Rouge. And to see a young kid come out of West Baton Rouge, who probably was destined to be a gang banger and slinging drugs, come out with little education, but craft and an \$80,000 job. And that is someone who is going to have a productive life.

Mr. Pitts. Thank you.

Ms. Bell. I would have to say, a lot of the industries that have traditionally touched the energy efficiency industry have relied heavily on skilled workers, particularly in the construction industry.

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I would also say, within the efficiency community, we are seeing a growing community of entrepreneurs, particularly in an area around information technology called intelligent efficiency. And this requires skills in computing, business, information technology, and in industrial settings. And this is an area that is going to require training and trained workers as well.

Mr. Pitts. Thank you. Ms. Jackson.

Ms. Jackson. You know, I would say that part of what has gotten us in the situation that we are in today in terms of this workforce pipeline is that this industry offers incredible stability. And so when we talk about these high percentages of people who are about to retire, it is because they have been in organizations with 30, 40 years. And so you can have a really fruitful career. It doesn't mean that you are in the same job for 40 years, but you have a long career doing a myriad of different things; but that if you like the organization that you are working for and they like you and you do a good job, you could literally start at 21 and retire at 65 and be in the same place. And I don't know that there are many other industries that can tell that kind of story across sectors like this one can.

Mr. Pitts. Thank you.

Mr. Gerard.

Mr. Gerard. Yeah. The only other thing I would add to

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that -- and I think Paula makes a great point -- is we view these as careers as long-term careers. So upward mobility in the oil and gas industry, there is great upward mobility. And as I mentioned earlier, 50 percent of our workforce will turnover in the next decade.

But I think the other piece of it we shouldn't overlook is the compensation associated with that upward mobility, because the median average wage in the U.S. today at 49,700. Ours is 96,000. And so these are great paying jobs. They are the type of jobs a lot of folks would love to have. And that is why this connection between these various segments in our industry is so important. We are putting a real focus on it.

But the technical skills -- this report we have released, it shows 1.3 million job opportunities. 63 percent of those fall in the traditional blue collar area.

So you can get various skill levels that are required, all the way up to the Ph.D. We have young people leaving high school in North Dakota, making \$100,000 driving a truck. And so these are great opportunities.

So we view ourselves as one-stop shopping, if you will, from whatever skill level you have, all the way to the most advanced in our society.

Mr. Pitts. Thank you. My time has expired.

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Mr. Whitfield. The gentleman's time has expired.

At this time, I recognize the distinguished gentleman from Louisville, Mr. Yarmuth, for 5 minutes.

Mr. Yarmuth. Thank you, Mr. Chairman, fellow Kentuckian. It is good to be here. And I want to thank you and Mr. Rush for your leadership on this issue. It is a rare instance of bipartisanship where we can actually discuss in harmony a policy that, I think, has great potential for the country.

I certainly agree with all of you that the energy field is going to be a source of continuing job growth and is one of the areas that we can look to to solving some of our employment challenges. And we have seen that in my district already.

We, because of a tax credit that Congress approved to reward the manufacturers of energy efficient appliances for manufacturing those appliances in the United States, General Electric brought a line of energy efficient hybrid water heaters back from China to Appliance Park in Louisville, creating -- bringing back 420 jobs. So we know we can do that.

And I am reading a book now that is fascinating to me, and I recommend it to everybody. It is called The Second Machine Age, and it deals with the impact of the digital revolution on a lot of aspects of life, but particularly on employment. And one of the themes of the

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book, with regard to employment, is that, as we move forward, the kind of jobs that will survive are not necessarily jobs that require education, they are jobs that don't involve a repetitive process, that if you are in a job that involves a repetitive process, that that is probably going to be eliminated by digital technology. And you think of bank tellers and checkout clerks at supermarkets and so forth.

So I am interested -- Ms. Bell, you, I think, alluded to this in your testimony that the -- and I know that in your prepared testimony, that your analysis is or your organization's that EPA's clean power plan will generate over \$625 billion in investment in various energy-efficiency industries and create an average of more than 400,000 jobs a year.

Are these the types of jobs that I am talking about that don't involve repetitive processes and seem to be kind of insulated against obsolescence because of digital technologies? It is the long way to get to a question. I apologize for that.

Ms. Bell. Well, as I previously mentioned, so I think that -- the short answer would be yes. When we perform these analyses, a lot of the job creation that we see is within the construction industry, which are jobs that don't necessarily involve those types of repetitive processes that you mentioned. They are also jobs that you can't really outsource. If you need somebody to work on your home,

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that is going to rely very heavily on local labor.

Mr. Yarmuth. All right. Thank you.

And, Director Harris, we know that besides the traditional energy jobs in oil, gas, coal, and nuclear, there will also be tremendous opportunities for minorities and women within the clean energy sector as well.

In your opinion -- well, in addition, I mean, everybody seems to agree that there are going to be a lot of good jobs for wage earners and salaried workers in the industry.

Do you see an opportunity for underrepresented communities to become entrepreneurs and to start their own businesses as a result of the emphasis of this legislation?

Ms. Harris. Absolutely. As a matter of fact, entrepreneurship, which is one area we work very closely with minority entrepreneurs. I am a previous owner myself. I am an entrepreneur as well outside of this, when I return to my private life.

So, yes. Absolutely. Entrepreneurship is the -- you know, of course, entrepreneurs employ, what, 90 percent of the jobs in this country. So, yes, absolutely. Particularly with the development that is happening in this country, we would have to rely on a lot of the entrepreneurs to promote the development here in energy.

Mr. Yarmuth. Okay.

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Ms. Harris. Yes.

Mr. Yarmuth. Well, I appreciate your testimony and all of your efforts in this regard. I think it is something that we can all get behind. And I, once again, thank the chairman and ranking member for their work. I yield back.

Mr. Whitfield. Gentleman yields back.

At this time, I recognize the gentleman from Illinois, Mr. Shimkus, for 5 minutes.

Mr. Shimkus. Thank you, Chairman. Appreciate it. Sorry I have been in and out. But I am not going to have a lot of questions.

Primarily the statement that, even in the great recession, in my district, we were building a coal-fired power plant and we are expanding a major refinery. So thousands of mostly building trade, union workers had jobs in the worst cycle of job creation, or lack thereof, in decades because of the fossil fuel sector.

That is the ConocoPhillips refinery that expanded to take oil sands, to take obviously the Keystone Pipeline and now hopefully Keystone XL eventually, to refine that, and to put it into the market.

And I also want to just take the note of -- I am an American Legion member, life member, and an Army veteran, so I get the magazine. In their September magazine, they do an expose on the Bakken and how it is a great place for veterans to find jobs.

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So I would -- so this is right up the alley of what we should also be thankful for in the fossil fuel sector: Good jobs, high paid wages, health care benefits, and really valuable work for, not just our Nation, but national security.

As we become more energy independent here in our country, those who focus on the problems around the world -- I like to focus on the Russian Federation that extorts allies on the fossil fuel sector. The more we are able to export crude oil and LNG and we have got to build those -- we have got to retrofit the LNG terminals, the more we help our allies who are democratic countries around this world be free.

And so we are in a -- we are in a very exciting period of time in our history, if we take advantage of it. So I want to applaud my friend, Bobby Rush, from the State of Illinois for helping us look at how we can get people more -- more people back to work.

And then in that, our country is strong militarily. We all know that. In this world today, we also have to be strong economically, and that is when people work.

And so I appreciate your testimony and you being here, and we look forward to working with you.

Mr. Chairman, I just wanted to put that on the record. I yield back.

Mr. Whitfield. Gentleman yields back. At this time, I

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recognize the gentleman from New York, Mr. Engel, for 5 minutes.

Mr. Engel. Thank you very much, Mr. Chairman.

A number of the questions I have been asked, but I just want to make a statement and then perhaps ask a question at the end.

So thank you. Thank you to the panel for being here and for sharing your views. I want to thank you, Mr. Chairman, and Mr. Rush as well for holding the hearing.

As our economy continues to recover, I am grateful that my colleagues and I have an opportunity to discuss such a critical aspect of America's economic future, which, of course, is the energy sector.

I am excited about the energy sector, and I am glad this committee is not only taking the time to focus on the potential the energy industry holds for job creation, but also on how this potential might positively impact women, Hispanic-Americans, and African-Americans.

The aim of the legislation is certainly commendable, providing the direct assistance to community colleges, schools with certain minorities, and workforce training institutions. I have many of those in my district. As the bill proposes would be a valuable tool in helping women and minorities succeed in the energy careers.

But I think we can and should look beyond higher education. Both Forbes and The New York Times recently reported that the STEM academic divide between white men, women, and minorities materializes years

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before college. This can happen for different reasons. Entrenched stereotypes about the professional and academic prospects for women in STEM fields have prevented teachers from devoting the same resources to young female students as their middle classmates.

And, additionally, according to the National Science Foundation, schools in primarily minority areas often hire teachers who are not as experienced in STEM disciplines as the teachers in primarily white areas.

Before I ever entered politics, I was a classroom teacher in my hometown of the Bronx, New York. I wanted to teach in minority areas at the time and did so for 7 or 8 years before politics caught my eye and went in a different direction.

But I felt then, as I feel now, that if younger people are exposed to these kinds of things -- we used to have a period called "chop," and we would teach young boys certain skills and -- but unfortunately, those were stereotyped. Girls did cooking, and boys did something else. Those are, I guess, the bad old days, but the intentions were really good.

So I really think that there is no magic bullet to solve these obvious problems, but I feel that these issues need to be discussed. And as Mr. Alford said in his testimony, it is critical to engage students, not just at the college level, but also at a younger age.

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I taught in the middle school setting.

I was heartened to hear Ms. Jackson's description of efforts of the American Association of Blacks in Energy has taken to encourage elementary, middle, and high school students to take an interest in energy careers.

Director Harris, let me ask you one question. I know it was sort of asked by Mr. Green, but perhaps if you could expand. Does the Department of Energy have any plans to help ensure that young female minority students' interest in the sciences are not forgotten or dismissed before they reach college? Perhaps you could expand on what you mentioned when you answered Mr. Green.

Ms. Harris. I am the senior official for the Department for the White House Council for Women and Girls. Girls -- as a matter of fact, all students, we want to catch them right where you were teaching, in middle school. If you capture a kid about the 6th grade, that is when you can get them interested in science, in STEM.

We work with a whole host of students -- girls in particular -- across the country. Everything from Girls Inc., Girls Scouts. My team know, when I travel, probably a good 30 percent of my travel has been focusing in STEM area, in visiting students and girls, in particular, all across the country. So this is a very, very, not only important initiative for the Department, Secretary Moniz, but

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me personally. I am very committed to this one.

Mr. Engel. Thank you. Let me ask you or anyone else who would care to answer. We know things are moving in the right direction. At least, I believe they are. Obviously, we still have a long way to go because these things have been engrained in society for a number of years.

And perhaps some of you had answered this while I was gone, but do you finally feel that we are getting it right, that we are moving in the right direction, albeit slowly, probably not fast enough? Is there hope? Are you hopeful that we are finally getting in and that energy, in particular -- because it obviously is something that is so important -- is the right field to get younger people interested in?

I have been a strong supporter of the U.S. energy. We are now the number 1 energy producer in the world, and I think that I am also on the Foreign Affairs Committee, and I think that energy is important in geopolitical discussions as well. It can make the United States even more of a player.

So I just -- if any of you would care to comment on direction. Yes. Mr. Alford.

Mr. Alford. Yes, sir. Well, here is another cliché. But you fish where the fish are biting. And energy is offering jobs by the thousands, and doesn't require serious education, I mean, multilevel

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education.

In fact, we are starting an ex-offender program where we are getting these kids coming out of prison and teaching them some skills or how to become an entrepreneur, how to make a widget and go sell it to people who buy widgets. And we are looking at the energy field as a marketplace for this, too, in addition to the other industries.

Mr. Engel. Yes.

Ms. Jackson. I think we are getting it right. I think we are on the path to getting it right. I think our biggest challenge has really been, not a lack of interest by students, but a lack of information. And so the more that we talk about this field and this industry as an opportunity, it certainly piques their interest.

I will give you one example. A year ago I was speaking to a group, and I met a young woman who was studying petroleum engineering and was unsure as to whether or not she would be marketable. And I asked her to send me her resume, and I was amazed to find that this woman had already had a BS in biology. She spoke five languages, including Arabic, and had no idea that someone would want to hire her.

And so we have just got to do a better job of letting students know that, hey, you know, we are here and we want you, because it just doesn't cross their mind.

Mr. Gerard. Mr. Engel, I think the verdict is still out. But

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I think our real test as a Nation -- it goes back to the question Mr. Rush asked earlier -- what is the risk if we don't get this right. And from your vantage point, being on Foreign Affairs, you see those risks in a very intimate, direct way.

But I think 3 or 4 years from now, if we look back on this point, and based on all the collaboration we are seeing, the leadership of this legislation, others, this is really the turning point. And part of that is an understanding on the part of the American public that we truly have moved from scarcity to abundance, and we have now got to shift that mindset.

It shouldn't be based on the Arab oil embargo of the 1970s. And that comes to public policy questions, like oil exports and others that Mr. Shimkus mentioned earlier. If we take advantage of those opportunities, and you know the implications of that better than I do in terms of our allies, our partners around the world, then I think we can look back at this time and declare a job well-done, that we captured the vision, we seized the moment, and we really moved us in a new direction. And it benefits all Americans from whatever walk of life.

But the focus here now creates the opportunity 5, 6 years down the road, we can look back and see how well we did, but I don't think we know yet. We have got to stay after this. This can't be a fleeting

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moment. It has got to be a long-term commitment, and we have got to stay at it, and then I think we will begin to see the culture change.

Mr. Engel. I agree. Thank you.

Thank you Mr. Chairman.

Mr. Whitfield. Thank you. And that concludes the questions for today. Mr. Rush.

Mr. Rush. Mr. Chairman, I ask for unanimous consent to enter into the record a letter in support of the bill from the National Urban League.

Mr. Whitfield. Without objection, so ordered.

[The information follows:]

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

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Mr. Rush. And, Mr. Chairman, if you don't mind, as we conclude this hearing, I must, again, applaud you, Mr. Chairman, and applaud all the members of the subcommittee on both sides of the aisle. This has been a rare occurrence here in the Congress over many years where you have bipartisan support, collaboration on an issue that is before the American people.

And I just can't -- it just gladdens my heart to know that this subcommittee is formulated by individuals who really care about their constituents and about the American people and who are visionary enough to see the opportunities, geopolitical, nationally, locally; that by aggressively and proactively and creatively harnessing the energy and the imagination of our people, the consciousness of our people to really take advantage of all the opportunity that we are blessed with in regards to this whole energy sector.

I mean, to squander these blessings would be the most awful sin that we can commit to the future of this Nation. And I just want to salute you and the courage of the other members of the subcommittee that have participated, and those who would have except for the need of other obligations.

But this is the spirit that I think that we all aspire to, realizing to be a part of when we take the oath to serve this Nation

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and our constituents. So, again, Mr. Chairman, thank you for your leadership.

Mr. Whitfield. Well, Mr. Rush, thank you. And it is a very important subject.

And during the hearing, I actually whispered to Mr. Rush if he felt uncomfortable in this kind of bipartisan effort. But it is an important issue obviously, and I look forward to working with all of you and our staffs doing more on this 21st Century Workforce Development Act.

And thank you so much for your testimony. And all of you provided real insights for us, and it was quite helpful. And as I said, I look forward to working with all of you.

The record will remain open for 10 days for any additional materials. And that concludes today's hearing. Thank you very much.

[Whereupon, at 11:36 a.m., the subcommittee was adjourned.]