



**National
Urban League**

*Empowering Communities.
Changing Lives.*

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February 15, 2017

Honorable Fred Upton
Chairman
House Subcommittee on Energy
U.S. House of Representatives
Washington, DC 20515

Honorable Bobby Rush
Ranking Member
House Subcommittee on Energy
U.S. House of Representatives
Washington, DC 20515

Dear Chairman Upton and Ranking Member Rush:

As President and CEO of the National Urban League, and on behalf of its 88 affiliates in 36 states and the District of Columbia, thank you for holding this important hearing on “Modernizing Energy and Electricity Delivery Systems: Challenges and Opportunities to Promote Infrastructure Improvement and Expansion.” The National Urban League’s (NUL) approach to these issues is from the lens of inclusion and equity, given that the employment and economic opportunities for African Americans and other minorities are compelling.

As a country increasingly dependent on technology, we have become more reliant upon energy in our everyday lives. Indeed, much of this nation's critical infrastructure (e.g. healthcare, telecommunications, defense, transportation, energy and water) is dependent on the power grid. Consequently, having a reliable, cost-efficient and secure energy supply has become particularly important in urban communities, not only for quality of life, but also because it is a competitive plus, a job creator, and can affect the overall economy of a region or locality. Today, we are witnessing a convergence of energy, telecommunications and transportation technologies and industries. These changes will only accelerate, and if not managed properly, will result in energy "Haves" and "Have Nots." The National Urban League is committed to an action plan aimed to thwart another critical economic divide in our urban and other underserved communities.

As Congress and the Administration begin to grapple with comprehensive investments in our nation's infrastructure and the needs of our energy and electricity delivery systems, in order for such investments to be fair and inclusive, they must include the following provisions clearly written into any legislative proposal:

- 1) **Specific provisions that ensure and commit to the inclusion of and meaningful participation by MINORITY BUSINESS ENTERPRISES (MBEs).** For far too long, too many have treated MBEs as an afterthought. This must stop and it is time for Congress to ensure that MBEs obtain meaningful participation in any energy modernization and infrastructure initiative. It requires assurance of supplier diversity, i.e. proactively promoting business programs that encourage the use of African American owned businesses as suppliers of goods and services. It includes an emphasis on the creation of a diverse supply chain that ensures the inclusion of diverse groups in the procurement plans for the entire energy industry and infrastructure improvements and expansions.
- 2) **A specific commitment to fund JOB TRAINING and WORKFORCE DEVELOPMENT as a central and essential part of any plan.** Provisions must focus on enabling young workers and urban residents to benefit from any infrastructure and energy modernization plan through training, pre-apprenticeships, and related approaches. It must promote meaningful skills development, technical training, internships and job placement opportunities for African Americans and urban community members. This must be fully integrated into any proposal. Once again, it cannot be separate or an afterthought. We loudly and forcefully champion this. Without this, the benefits will not be broadly and fairly shared.

- 3) **Investments that include community facilities such as SCHOOLS, PARKS, LIBRARIES, COMMUNITY CENTERS, NEIGHBORHOOD CENTERS AND COMMUNITY FACILITIES.** These are tools that mayors and urban advocates will insist on so that the benefits will be broadly and fairly shared.

The National Urban League has long advocated for a major investment in our nation's neglected infrastructure. Recognizing the role that infrastructure investment can play as a "job-creation machine," the National Urban League called for the concept of an infrastructure bank when we released our blueprint for economic equality, *The Opportunity Compact*, in 2007. The *Compact* called for the creation of an Urban Infrastructure Bank to fund reinvestment in urban communities. In 2008, we provided written testimony to the Senate Committee on Banking, Housing and Urban Affairs, in support of the National Infrastructure Bank Act, with recommendations to improve the bill for urban communities. As part of the release of our 2016 State of Black America report, we introduced our Main Street Marshall Plan that calls for a plan to fund comprehensive urban infrastructure investments. And in our testimony before the DNCC Platform Committee on our Main Street Marshall Plan, we highlighted that investments made in building and sustaining schools, community centers, libraries, water systems and urban transportation can result in short-term GDP boosts and job growth that will have long-term positive impacts, especially in our urban communities.

In the specific area of Energy, the National Urban League recently released a special report, "**21st Century Innovations in Energy: An Equity Framework.**" The report is intended to: 1) provide overviews of the domestic electricity, solar, and oil and natural gas industries; 2) present current employment numbers in each sector; and 3) highlight economic and employment opportunities in each sector. The report concludes by launching the NUL's Energy Plan.

On behalf of the National Urban League, I look forward to working with Congress to ensure that our concerns and recommendations are fully integrated into any final plan to invest in energy modernization and our nation's vast infrastructure needs.

Very truly yours,



Marc H. Morial
President and Chief Executive Officer
National Urban League

Attachment



21ST CENTURY INNOVATIONS IN ENERGY: AN EQUITY FRAMEWORK

By Donald Cravins, Jr.

SVP for Policy, National Urban League

Report Overview

The National Urban League (NUL), through its Washington Bureau, submits this report focusing on the economic opportunities of the American energy industry and hereby issues the National Urban League Plan for Working with Private and Public Partners (NUL Energy Plan). At the onset it is important to point out this report is not intended to serve as an environmental position paper on the various types of energy. NUL will continue working with its diverse partners on climate change and environmental justice issues. However, this report has a very specific scope. It is an economic and inclusion report. It is intended to 1) provide overviews of the domestic electricity, solar, and oil and natural gas industries; 2) present current employment numbers in each sector; and 3) highlight economic and employment opportunities in each sector. The report concludes by launching NUL's Energy Plan. The NUL Energy Plan provides a framework for building a dialogue and partnerships with the various aspects of the energy industry on issues important to the NUL, its mission, and the constituents it serves.

Engaging at this important moment in the energy sector and in the 2016 State of Black America makes sense for several reasons.¹ First, NUL's mission calls it to engage. The mission of the National Urban League Movement is to enable African Americans and other underserved urban residents to secure economic self-reliance, parity, power and civil rights. The energy industry, with all of its sectors, is a conduit to achieving this mission. Second, with proper education, engagement and advocacy, NUL can play a unique role in ensuring that the future of the industry is more diverse both in its workforce as well as its downstream ecosystem. This paper is intended to serve as the starting place for an action plan around creating more equitable policies in how energy is used and greater participation in how our community can help shape those policies.

Overview of the American Energy Sector and Workforce

The United States enters a new era in domestic energy abundance characterized by rising use of renewable energy as well as an increased oil and natural gas production.² Today America is the world's leader in oil, natural gas and refined product production. Oil and natural gas supplies more than 60% of the energy Americans use every day.³ This nation's electric power grid is the largest interconnected machine on Earth. It consists of more than 9,200 electric generating units with more than 1,000,000 megawatts of generating capacity connected to more than 300,000 miles of transmission lines. As a country increasingly dependent on technology, we have become more reliant upon energy in our everyday lives. Much of this nation's critical infrastructure (*e.g.* healthcare, telecommunications, defense, transportation, energy and water) is dependent on the power grid. Consequently, having a reliable, cost-efficient and secure energy supply has become particularly important in urban communities, not only for quality of life, but also because it is a competitive plus, a job creator, and can affect the overall economy of a region or locality.⁴ In order

to meet these energy needs, as a country we have adopted an "all of the above" strategy, which reflects the fact that for the foreseeable future we will continue to be dependent in varying degrees on coal, natural gas, oil, nuclear, and renewables as our primary sources of energy.⁵ This mix however must continue to evolve by reflecting advances in technology and by getting cleaner every day.

In 2015, 36% of the energy consumed in the United States by all energy consuming sectors (transportation, industrial, residential and commercial, and electric power) was from oil; 29% came from natural gas; 16% from coal; 9% from nuclear; 4.9% from bio mass; 2.5% from hydro; and 2.7% from solar, geothermal and wind.⁶ Domestic energy production met approximately 91% of this country's energy demand. Simultaneously as our dependence on energy is growing, the energy industry, the electricity sector in particular, has begun to undergo significant changes as a result of the introduction of new technologies and sources of power.⁷ We are witnessing a convergence of energy, telecommunications and transportation technologies and industries. These changes will only accelerate and if not managed properly will result in energy "Haves" and "Have Nots."

The convergence of these sectors is an opportunity for us to grab hold of and participate both as consumers and as part of the labor force it is creating. Due to energy's ubiquitous role in our daily lives and broader economy, we should be more aware and active in its importance to African American and urban communities. Think for a minute about the home appliances and electronics that use gas or electricity, or about the fuel that gives Americans mobility to travel or receive goods and services, not to mention the jobs that are associated with all aspects of this industry. And take another minute to consider if you know anyone who has trouble deciding whether to pay an energy bill or for some other important need like food or medication. Balancing the opportunity and cost is challenging. But we don't run from challenges, we meet them head on.

There is a great deal at stake. Government and industry data vary in determining exactly how to measure the amount of energy industry jobs, but it is safe to say that millions of people are employed either directly or indirectly by the broader industry. For example, according to one report, the three segments of the U.S. oil and gas industry and the petrochemical industry together employed a total of 1.4 million people in 2015.⁸ The electricity sector reports approximately one million direct and indirect jobs in the energy infrastructure transmission, storage and distribution sectors. The solar industry claims over 200,000 employees. The takeaway here is that the energy sector is a people intensive industry with opportunities to explore across the nation and at all levels.

Looking forward, these industries are projected to have nearly 1.9 million job opportunities available through 2035 in all regions of the country. Part of these opportunities comes from the fact that the industry is "graying" and many current industry employees are eligible for retirement. With the right emphasis, training, and preparation, the prospects for growth in employment among African Americans and Latinos in the energy industry are good.⁹ In the next 7 to 10 years, electric and natural gas utilities will see up to one half of their personnel retire.¹⁰ Addressing this skills gap presents an historic opportunity to create a workforce that reflects the increasing diversity of our nation. Further, as America continues to transition to cleaner and renewable energy, the employment and economic opportunities for African Americans and other minorities could be immense.

All of this growth also presents opportunities for minority business enterprises seeking joint ventures and for individuals seeking to form new enterprises. According to Advanced Energy Economy, the U.S. advanced energy market generated \$200 billion in revenues in 2015, more than the pharmaceutical manufacturing industry and almost as much as consumer electronics. Last year, revenues grew 75% in the wind segment and 21% in the solar market, while revenues related to building efficiency grew 11% and those in energy storage multiplied more than 10 times. The opportunities are compelling.

The Electric Power Sector of Today and Tomorrow

This nation's electric industry is quite sophisticated. Electricity is supplied through a nationally integrated grid involving interconnected generation plants, high voltage transmission and lower voltage distribution lines, gas pipelines, substations, transformers and smart meters—all linked in a network designed to provide ubiquitous service.¹¹ There are thousands of electric and gas utilities including co-ops, public and investor owned ("IOUs") entities and these utilities are considered to be critical infrastructure industry ("CII") companies. Many of these utilities (including all of the IOUs) are regulated on the state level by public service commissions ("PSCs") and on the federal level by the Federal Energy Regulatory Commission ("FERC"). These regulated utilities have a legal public service obligation to provide ubiquitous service and to be the providers of last resort for all consumers. As a result of federal and state deregulatory policies in some states, many local power companies no longer own generation plants or control the transmission of high voltage electricity, and instead are required to purchase power from the competitive market. Likewise, retail choice or "competition" laws in some states allow third party merchant energy suppliers to market power directly to customers with no infrastructure requirements, while the local companies are still responsible to both deliver gas and electricity supply to end users and maintain the infrastructure necessary to do so. Moreover, some customers are now generating some of the power they use through the use of (rooftop) solar panels that they procure directly, through third party providers or their utility.

The electric industry as a whole is undergoing a significant transformation as a result of a number of factors, including new technologies, lower cost of fuels, environmental protection, and consumer preferences. Innovative technologies and offerings along with new sources of power are being introduced at an unprecedented rate, including but not limited to renewable energy technologies and distributed energy resources such as solar and wind, electric vehicles, energy efficiency, and demand response.¹² Also, microgrids, for example, are being deployed to enhance the reliability, stability, and resilience of the grid. New services and products are being offered to consumers using the grid as the platform to enhance consumer choice, value and flexibility. These new technologies and services will provide increased consumer benefits. They also have the potential for creating new jobs and new businesses opportunities as investment in existing infrastructure increases and new and existing businesses within the electric sector expand and evolve.

In order to 1) support the requirements of the new technologies, services and sources of power; 2) ensure the continued safety, reliability, sustainability, and security of the grid; and 3) enable the provision of the innovative electric offerings that consumers will desire; power companies are investing billions of dollars in modernizing the electric grid. For example, in 2016 electric companies are projected to invest more than \$52 billion in transmission and distribution systems. Also, throughout the last decade electric companies have increasingly invested in clean

power projects, energy efficiency, and demand response programs.¹³ Moreover, the electric industry has begun to develop large (universal), medium (community) and small solar projects in order to serve large segments of urban areas with solar energy. Although one study showed utility-scale solar came in at half the cost of residential rooftop solar,¹⁴ some consumers still wish to own or procure their own renewable power. Community solar, for instance, is a model that is gaining traction since it allows individual consumers to have their own share of solar even if they do not meet the requirements to have their own system at home (e.g. apartment living, shaded or not optimal roof, etc.). It is a model that can also help avoid the appearance of a national energy divide littered with "Haves" and "Have-Nots" since it allows the new energy technologies and services to be made available in all neighborhoods if done properly with fair and equitable policies.

Employment Numbers and Opportunities for Growth in the Utilities Sector

Employment is indeed a major issue for the energy industry as a whole. The industry's workforce is graying. It is estimated that overall 38% of the employees in the electric and gas utility sector may retire in the next decade, along with nearly half of the oil and natural gas industry employees. At the same time both the direct and indirect employment in the electric and gas utility, and oil and natural gas industries are expected to grow by approximately 1.9 million jobs by 2035. Many of these jobs are skilled craft trade jobs.

According to the U.S. Department of Labor's Bureau of Labor Statistics, there were an estimated 1,267,000 persons employed by utilities in 2015. The data shows that 8.5% or 107,635 are Black or African American, 3.3% or 41,811 were Asian and 11.1% or 145,000 were Latino.¹⁵ Within the utility sector, the majority of African Americans, Asians and Latinos are employed in the electric power, transmission, and distribution and electric gas, and other combination sectors. Of the estimated 661,000 persons employed in the electric power sector, 7.6% or 50,236 are African American, 3.8% or 25,118 are Asian and 9.22% or 60,815 are Latino. With regard to the electric and gas and other combination sector, of the estimated 85,000 employees, 9.4% or 7,990 are Black or African American, 3.4% or 2,890 are Asian and 14.2% or 12,070 are Latino. According to the U.S. Bureau of Labor Statistics, African Americans made up 12% of the U.S. labor force in 2015. Since African Americans do not constitute at least 12% of the workforce in any of the utilities sectors, there is definitely room for improvement.

There are also opportunities at the senior executive and board levels of these companies. A review of the top ten publically owned utilities by market capitalization determined that approximately 13% of the companies' directors were African American or Latino. Again, while this represents progress, there is room for improvement.

The Solar Energy Sector

The expansion of solar energy in our nation provides a powerful example of how developing new technologies are being integrated into our nation's energy mix and the employment opportunities that can result. One of the most significant threats to America's future is climate change. The United States solar industry represents one of the strongest options to address this issue. According to GTM Research and the Solar Energy Industries Association (SEIA), in 2015 the U.S. installed 7,430 megawatts (MW). Now with over 27 gigawatts (GW) of total capacity, solar energy was expected to comprise 1% of total U.S. energy generation by the

end of 2015.¹⁶ This was a 42% increase over 2013, making it the best year for solar installations in America to date.

From an environmental perspective, solar helped offset an estimated 20 million metric tons of harmful CO₂ emissions in 2014, which is the equivalent of taking 4 million cars off U.S. highways or saving 2.1 billion gallons of gasoline.¹⁷ Simply put, when looking at America's energy future, solar can be a real game changer, providing more and more homes, businesses, schools and government entities across the United States with clean, reliable and affordable electricity while also helping states to meet proposed new obligations under Section 111(d) of the Clean Air Act, commonly known as the Clean Power Plan.

Employment Numbers and Opportunities for Growth in the Solar Industry

Solar jobs continue to grow across the country throughout all 50 states – almost 12 times faster than the overall economy. According to the most recent installment of the National Solar Jobs Census, a product of The Solar Foundation (TSF), the U.S. solar industry currently employs 208,859 workers, a figure which represents 20.2% growth in employment over the previous year. This growth rate makes 2015, the third consecutive year in which employment increased by 20% or more. Since TSF first began tracking solar employment in 2010, the industry has grown by 123%, resulting in nearly 115,000 new domestic jobs.¹⁸ According to TSF's National Solar Jobs Census 2015, when direct solar jobs are combined with indirect jobs created by the industry (610,650), the total employment factor for the U.S. solar industry is 818,309 jobs.

Notwithstanding the huge potential in the solar industry for all Americans, there must be a concerted effort to ensure African Americans and communities of color are part of the solar equation. African Americans make up 12% of the U.S. labor force according to the U.S. Bureau of Labor Statistics, yet in 2015, they constituted just 5.2% of the solar workforce – a decline from the 6.0% in 2014. According to 2015 National Solar Jobs Census from the Solar Foundation, African Americans continue to represent the smallest proportion of any racial group in the solar industry.¹⁹ In contrast, Asian Americans, while only 6.1% of the U.S. workforce, represent 8.7% of solar workers, an increase of 1.7 percentage points since 2014. When looking at employment numbers in the various sectors of the solar industry (manufacturing and demand side), the industry needs to do more to increase its workforce diversity.

For example, the solar manufacturing sector manufactures a variety of products and component parts for domestic and international solar markets. It reports that African Americans are at the bottom, comprising just 9.7% of that workforce, compared to 16.2% for Asians and 11.3% for Latinos.²⁰ The 2015 National Solar Jobs Census also looked at the demand-side sector (installation, sales and distribution and project development) of the solar industry. Installation represents the end of the solar food chain and is its largest sector. Nearly two-thirds of new solar jobs in 2015 were created by the installation sector. African Americans comprise 4.9% of the installation employment, while Asians comprise 7.0%, and Latinos comprise 13.50%.²¹ The sales and distribution sector is made up primarily of wholesale and retail trade establishments. These establishments are engaged in the selling, but not the installing of solar services. Sales and distribution firms are less diverse than other sectors of the industry. Latinos, African Americans and Asians together represent less than 14% of all solar sales and distribution employees. Among the group, Africans Americans have the smallest share, with just 2.3% compared to 7.8% for Asians and 3.3% for Latinos.²² The project development sector includes utilities and companies

that work with the largest, utility-scaled solar projects. There is only a 4.8% representation for African Americans compared to 7.0% Asian and 12.9% Latino.²³

Interestingly enough, TSF also analyzed employment numbers related to “other” entities that play a role in the solar industry. TSF looked at 570 organizations such as research and development firms, finance and legal firms, nonprofits, government agencies solar training providers and academic research centers. Within those entities, African Americans comprised only 3.1% of the employment as compared to 11% Asian and 3.2% Latino.

NUL is concerned about equitable opportunities in all sectors of the energy industry, and particularly interested in understanding how we can help address the very low employment numbers in emerging green markets. Companies must work to ensure the barriers that often exist between sustainability programs and low-income communities are erased. In order to halt or to prevent this “green divide”, there must be a concentrated focus on employment, job training, and procurement opportunities in the solar and renewables sector.

The Oil & Gas Industry

As the world’s top producer of oil and natural gas, and the world’s leading refiner of petroleum products, America now occupies a position of energy leadership that was unthinkable a short time ago. Natural gas’s use for the generation of electricity is increasing as coal-fired plants continue to be retired.²⁴ At the same time as the use of natural gas is increasing, the natural gas industry is undergoing a transition driven in part by the utilization of shale. In 2013, shale gas made up 40% of the gross production of natural gas and is the dominant source of domestically produced gas.²⁵ Another tangible benefit of clean, abundant natural gas is that the United States is experiencing the lowest levels of carbon emissions since 1994.²⁶ Oil production has increased such that the United States is now producing more oil than it imports. Net U.S. imports of energy declined from 30% of total energy consumption in 2005 to 11% in 2015 as a result of strong growth in domestic oil and natural gas production and slow growth of total energy consumption.²⁷

In addition to its importance in the U.S. and global economies, the oil and natural gas industry represents a significant opportunity for job growth among racially and ethnically diverse communities. In 2015, there were nearly 1.4 million people employed in the oil & gas and petrochemical industries, with nearly 94,000 African Americans and 283,500 Latinos.²⁸ And the numbers look to grow in the future. As an example, a report titled “*Minority and Female Employment in the Oil & Gas and Petrochemical Industries*,” estimates that millions of job opportunities could be created by 2020 and nearly 1.3 million job opportunities through 2030, and 1.9 million through 2035, across the country in the oil and natural gas and petrochemicals industries. At a minimum, the report estimates that African American and Latino workers could make up nearly 37% of all new and replacement jobs. It is important to note that these projections are base-line estimates of current and projected trends in factors such as labor participation, population growth, and educational attainment rates. Increased awareness about industry jobs, training, and opportunities in the industry among communities of color could greatly improve this outlook.

While the oil and natural gas industry should be acknowledged for assessing the opportunities by providing the data on current and future workforce opportunities as well as

starting a conversation about greater inclusion, the industry still has a long way to go. In 2014, African Americans represented only 7% of the oil and gas workforce. Further, according to their own projections, African Americans are expected to make up slightly more than 6% of the workforce by 2035 if significant improvements are not made.²⁹

Diagnosing One of the Problems

African Americans are underrepresented in the workforces of most industries and such low numbers can be attributed to a number of factors. In order to design precise tools and resources to address employment disparities in any industry, it is necessary to diagnose the root causes of the low employment numbers for people of color.

For decades industry experts and workforce advocates have believed a key element in achieving higher levels of African American and Latino employment in the energy industry is to increase the education and training of these groups as well as strengthening overall skills in the critical Science, Technology, Engineering and Mathematics (STEM) disciplines. However, from an early age, many African Americans and communities of color are at a disadvantage. Less than one-third of public high schools serving predominantly African American students offer calculus.³⁰ Only about 40 % of public high schools serving predominately African American students offer physics.³¹ And according to the U.S. Department of Education, many African Americans in high school do not benefit from such resources as Advanced Placement (AP) courses where they can acquire college credit. African American students represent 16 % of all high school students, but only 9 % among students enrolled in an AP course.³² Of the African American students enrolled in an AP course, only 4 % received AP test scores that qualified for college credit. No African American students took the AP computer science exam in nine states: Idaho, Mississippi, Montana, New Hampshire, New Mexico, North Dakota, South Dakota, Utah, and Wyoming. Mississippi has the highest share of African Americans of any state.^{33 34}

Moreover, although African American and Latino college enrollment is up by more than a million students since 2008, students of color still have low degree completion rates and low representation in STEM fields.³⁵ African American students, like their Latino and Asian counterparts, are underrepresented in STEM programs and courses of study compared to their overall college enrollment rate. African Americans received just 7.6 % of all STEM bachelor's degrees and 4.5 % of doctorates in STEM.³⁶

As discussed below, there must be sustained efforts to direct students of color into STEM disciplines starting in primary education and continuing through secondary school. Further, there must be a focus on vocational training as many jobs in the energy sector require only such training yet pay competitive salaries. Finally, there must be continued efforts to see students of color complete two year and four year college programs.

Steps in the Right Direction

In spite of the challenges, there are several examples of programs, initiatives and success stories in the energy sector that show positive steps to address workforce and supplier diversity. For example, the Center for Energy Workforce Development (CEWD) was formed in March 2006. It is a non-profit consortium of electric, natural gas and nuclear utilities and their associations: the Edison Electric Institute, American Gas Association, Nuclear Energy Institute,

American Public Power Association and National Rural Electric Cooperative Association. CEWD was formed to help utilities work together to develop solutions to the coming shortage of skilled workforce in the utility industry. CEWD has worked on a comprehensive set of tools and processes to attract, train, and hire a diverse, qualified workforce and has partnered with education, government agencies and community groups to create workable solutions to address the need. CEWD has also established a partnership with the International Brotherhood of Electrical Workers and the Utility Workers Union of America.

The oil and natural gas industry has also been developing strategies, research, and programs to better understand the challenges and create greater public awareness of the opportunities associated with engaging and growing high impact strategic partnerships based on shared interests in job creation and workforce opportunities in the industry. This focus on greater collaboration, outreach and education with African Americans and other minorities, Millennials, Veterans, and Women begins with in-depth research and is in support of developing and preparing for the industry's workforce of the future.

There are also examples of the opportunities for small businesses and African American entrepreneurs. The first African American-owned solar manufacturer, WDC Solar, was formed in 2009 in the Washington D.C. neighborhood of Anacostia and began creating high quality jobs for local residents. The residents of that neighborhood face some of the highest rates of unemployment in the nation. WDC's owner, former NBA player Mark Davis, says he got into solar power after realizing it was mostly wealthy people who could afford the upfront cost to install solar power and reap the added extra reward of hefty tax credits for using the renewable energy. WDC Solar, not only provides free solar energy to low-income residents in Washington, D.C., but it has also created close to 20 jobs in the area -- with pay that starts at \$15 to \$23 an hour.

The utilities and oil and natural gas industries have also undertaken efforts with regard to diversity and education. In states such as Maryland and California many utilities and telecom companies have entered into voluntary Utility Supplier Diversity Memorandums of Understanding (MOU) with their public service commissions. In the MOUs, the companies have agreed to take various steps to enhance their utilization of diverse suppliers.

The energy industry as a whole has taken steps to support STEM programs in recognition that exposure to STEM subjects, college majors and careers is especially important to the workforce of the future in all energy segments. Since communities of color are particularly underrepresented in these areas, the National Urban League sponsors a program called Project Ready STEM. It is an effort to provide middle and high school students with the academic and experiential support necessary to increase their interest in and understanding of STEM subjects. These types of STEM programs are critical if we are to have a pipeline sufficient to supply the large number of minority candidates necessary to supply the future needs of the energy industry. In addition to typical STEM fields such as engineering, computer science, and other technology related disciplines, the energy industry is emphasizing the importance of STEM for success in all of its jobs at every level from plumbers, pipefitters, and electricians to meteorologists, data analysts, accountants, and equipment operators.

NUL's Project Ready STEM affiliates collaborate with local STEM partners, who utilize the Project Ready STEM curriculum guide and related tools to improve STEM education in their

communities. NUL has intentionally structured the Project Ready STEM enhancement to provide a wide range of opportunities and supports for underrepresented youth in order to broaden their participation in the STEM fields. The program offers informal and formal STEM academic supports, project-based learning, mentoring, and engagement with role models in STEM-related careers and academia. In 2015, in order to improve STEM practices in Project Ready programs and deepen local partnerships, the NUL established the STEM Coach Model. In the pilot phase, the model is focused on elevating promising STEM practices and building the capacity of local staff, teachers and partners. With support from national funders, NUL currently funds Urban League affiliates for Project Ready STEM, targeting approximately 380 high school youth.

NUL's Plan for Working with Private and Public Energy Partners

In conclusion, NUL endeavors to build a dialogue and partnership with the various sectors of the energy industry and with organizations dedicated to inclusion. For example, NUL has a long standing relationship with The American Association of Blacks in Energy (AABE). AABE is 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 policies regulations, R&D technologies, and environmental issues. Through these relationships, ongoing education about the developments in the industry and meaningful dialogue on inclusion, NUL will continue to develop an action plan focused on the following key areas of interest:

1. **Jobs:** To advocate for and work with a diverse set of stakeholders including labor organizations, the Center for Energy Workforce Development, the oil and natural gas industry, and the renewable energy sector to promote meaningful skills development, technical training, internships and job placement opportunities for African Americans and urban community members.
2. **Diversity:** To develop written community-based diversity plans that clearly define measures for success advancing diverse employment across all levels and sectors of the energy industry including in its C-Suites, Boards and outside consultants.
3. **Ownership:** To promote entrepreneurial activities, not just in the traditional fields of construction and procurement, but also in other areas by expanding utility MOU programs and developing financing mechanisms.
4. **STEM:** To develop and promote programs which lead to jobs and ownership through partnerships among utilities, energy companies, HBCUs, NUL affiliates and others. To lend our advocacy for a broader definition of STEM that works to educate and engage diverse communities about the critical importance of STEM – as fields of study, in related career opportunities, and through practical application with a focus on all disciplines that incorporate science, technology, engineering and math.
5. **Ubiquitous Service:** To work to ensure that electric rates are fair and affordable for all customers and that all neighborhoods and customers receive the benefits and share the costs of the energy transformation regardless of the technology used.
6. **Housing:** To work in conjunction with NUL affiliates, utilities and energy companies to promote increased funding for LIHEAP, the broader utilization of energy efficiency

programs, and the development in all communities of projects such as solar gardens, microgrids and EVs.

7. **Environmental Justice:** To promote energy policies that fairly and meaningfully involve all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies ensuring African Americans have access to clean and healthy environments.
8. **Renewable Energy:** To recognize renewable energy as a vital part of an overall energy strategy that recognizes all sources of energy. To promote the expanded utilization of renewable energy in a manner which ensures that its benefits are shared, promotes jobs, builds local economies, address environmental concerns and reduces overall energy costs.
9. **Consumer Protection:** To educate consumers on energy issues and advocate for increased consumer protections.
10. **Supplier Diversity:** To proactively promote business programs that encourage the use of African American owned businesses as suppliers of goods and services. These programs and policies should emphasize the creation of a diverse supply chain that ensures the inclusion of diverse groups in the procurement plans for the entire energy industry.

¹ The State of Black America is the National Urban League's seminal annual publication now in its 40th edition.

² American Petroleum Institute, *State of American Energy Report 2016* (January 2016).

³ Ibid.

⁴ Power outages and interruptions cost Americans at least \$150 billion each year. Department of Energy, *the Smart Grid: An Introduction*.

⁵ See Council of Economic Advisors, *The All-of-the Above Strategy as a Path to Sustainable Economic Growth* (May 2014).

⁶ http://www.eia.gov/energyexplained/index.cfm?page=us_energy_home

⁷ National Regulatory Research Institute, *Recent Developments in the U.S. Electric Industry: Options for State Utility Regulators* at 3-4 (November 2014).

(http://www.eia.gov/energyexplained/index.cfm?page=us_energy_home) (U.S. energy consumption by energy source, 2015)

⁸ IHS, *Minority and Female Employment in the Oil & Gas and Petrochemical Industries, 2015-2035* (March 2016).

⁹ American Petroleum Institute, *Employment Outlook for African Americans and Latinos in the Upstream Oil and Natural Gas Industry* at p. 20 (November 2012).

¹⁰ Center for Energy Workforce Development *Gaps in Energy Workforce Pipeline 2013 Survey Results* at 3 ("CEWD Study")

¹¹ See e.g. National Council on Electricity Policy, *Electricity Transmission A Primer* at 6 (2004).

¹² QER at 3-3. (MODERNIZING THE ELECTRIC GRID)

¹³ IEE, *Energy Efficiency: A Growing Utility-Business solution to Reliability, Affordability, and Sustainability* at 1 (September 2013). [Attachment 4].

¹⁴ *Brattle Group's Fox-Penner says utility scale significantly more cost-effective than residential*, <http://www.eenews.net/tv/videos/2043/transcript>

¹⁵ <http://www.bls.gov/cps/cpsaat18.htm> - It is important to note that the Department of Labor's definition of utilities includes electric power, natural gas, steam supply, water supply, and sewage removal which is why the overall number of employees is greater here than in other sections of this report.

¹⁶ SEIA/GTM Solar Market Insight Q3 2015 (<http://www.thesolarfoundation.org/wp-content/uploads/2016/01/2015Census-Factsheet-FINAL1-12-16.pdf>)

¹⁷ U.S. Environmental Protection Agency, *Greenhouse Equivalencies Calculator*, available at: <http://www.epa.gov/cleanenergy/energy-resources/calculator.html>

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- ¹⁸ <http://www.thesolarfoundation.org/wp-content/uploads/2016/02/TSF-State-Solar-Jobs-Census-2015-Fact-sheet.pdf> (<http://www.thesolarfoundation.org/national/>)
- ¹⁹ <http://www.thesolarfoundation.org/wp-content/uploads/2016/01/TSF-2015-National-Solar-Jobs-Census.pdf>
- ²⁰ Ibid at p. 31.
- ²¹ Ibid at p. 24.
- ²² Ibid at p. 35.
- ²³ Ibid at p. 40.
- ²⁴ Brattle Report at 3.
- ²⁵ EIA Natural Gas Annual, September 2015. <http://www.eia.gov/todayinenergy/detail.cfm?id=18951>
- ²⁶ EIA Monthly Energy Review, August 2016. <http://www.eia.gov/totalenergy/data/monthly/pdf/mer>
- ²⁷ EIA Monthly Energy Review, August 2016. <http://www.eia.gov/totalenergy/data/monthly/pdf/mer.pdf>
- ²⁸ American Petroleum Institute, Minority and Female Employment in the Oil and Natural Gas and Petrochemical Industries (February 2016).
- ²⁹ Of the more than 1.9 million jobs that will be available between now and 2035, only 130,000 are expected to go to African Americans, while 576,000 are expected to be filled by Latinos.
- ³⁰ <http://www.ed.gov/news/press-releases/fact-sheet-spurring-african-american-stem-degree-completion#fn04>
- ³¹ Simon, Stephanie. "Racial Divide Runs Deep in U.S. Schools, Study Finds." Reuters. March 6, 2012. <http://www.reuters.com/article/us-usa-education-inequality-idUSTRE82507620120306>.
- ³² <http://www2.ed.gov/about/offices/list/ocr/docs/crdc-college-and-career-readiness-snapshot.pdf>, pg. 11
- ³³ <http://research.collegeboard.org/programs/ap/data/archived/ap-2014> (state report summaries)
- ³⁴ <http://www.wiche.edu/info/knocking-8th/profiles/ms.pdf>
- ³⁵ http://nces.ed.gov/programs/digest/d13/tables/dt13_306.30.asp
- ³⁶ https://nces.ed.gov/programs/digest/d14/tables/dt14_318.45.asp