



EXECUTIVE SUMMARY

"This is a huge mission space that the Minorities in Energy Initiative is taking on, and we need to keep working harder and doing more to advance access and engagement for minorities in the energy sector. It would be a mistake not to tap all the talent our country has to offer. This Initiative is important to our nation, important to our national security, important to our climate, and important to our future."



The Honorable Daniel Poneman
Deputy Secretary
U.S. Department of Energy

Overview

The mission of the Department of Energy is to ensure America's security and prosperity by addressing its energy, environmental and nuclear challenges through transformative science and technology solutions.

A cornerstone of technology leadership and its accompanying jobs is a vibrant science and technology enterprise. To achieve this, the Department needs to cultivate the entire technology innovation chain, from enabling discoveries to research, development, demonstration, and deployment. The Department must create the conditions today that will harness the next generation of scientists and engineers to support its mission, administer its programs, and conduct the research that will support energy economic development and realize the nation's science, technology, and innovation agenda.

There is compelling evidence that carbon-dioxide emissions from human activities are adversely affecting the climate. Our responsibility to future generations is to eliminate most of our carbon emissions and transition to a sustainable energy future. As the country takes steps to address climate change through mitigation and adaptation efforts, we can expect there to be business and workforce opportunities that follow.

In July 2013, the Secretary of Energy tasked the Office of Economic Impact and Diversity to assemble a broad group of stakeholders from across academia, non-profit organizations, policy groups, and business to begin a dialogue on the position of minority communities as it relates to the Department and the energy sector overall. These stakeholders included the White House Office of Science and Technology Policy, the White House Office of Public Engagement and the White House Council on Environmental Quality. The stakeholders met over several weeks and identified three key areas and the development of strategies to engage minority communities in the energy sector. These three focus areas are STEM Education/ Workforce Development, Energy Economic Development, and Climate Change. This effort was the beginning of the "Minorities in Energy Initiative (MIE)."

The timing for such an initiative could not be better - energy is the third largest industry in the U.S. and it is growing rapidly. Our country is undergoing an energy revolution spurred by new technology in fossil fuel recovery and renewable energy generation. Our aging infrastructure needs to be upgraded and expanded to allow for new fuel sources to come on-line. The government and private sector are poised to make large investments in energy efficiency to adapt to climate change. The MIE Initiative seeks to engage minority communities, job seekers, and business owners in this rapidly expanding sector by increasing awareness, building capacity, and uncovering policy solutions to overcome the challenges of these communities to fully engage in energy.

The MIE Initiative will be a sustainable program of the Office of Economic Impact and Diversity (ED) at the Department. The initiative will provide a national platform for ED to accomplish its mission mandated by Congress when it created the Office in 1978, which is to ensure that minority communities have full access to the programs and activities of the Department, that needs of these communities be taken into account when energy policy is developed, and that DOE promote engagement of minority communities in the overall energy sector. To assist ED in accomplishing its broad mission, the MIE Initiative is both internally focused on increasing participation of minorities and minority businesses in the Department's activities as well as externally focused on building capacity of minority communities to participate in the energy sector job and business opportunities.

The MIE Initiative has been designed with three major components:

- 1) **Annual Symposium:** The MIE kick-off event on September 24, 2013 served as the first symposium, and the MIE Initiative will host one such gathering per year to review progress over the past year, identify new challenges, and recalibrate the program's goals and activities.
- 2) **Ambassadors Program:** Selection of leaders who have committed to lending their voice to the mission of the MIE Initiative and will include the MIE Initiative in their speaking engagements throughout the year.
- 3) **Annual Recognition Program:** An annual recognition program will highlight the efforts of individuals and organizations that have achieved tangible results in increasing the engagement of minority communities in the energy sector through achievements related to STEM education/workforce development, climate change, energy literacy, and increasing the capacity of minority businesses to participate in the energy sector.

The conversation has begun, the focus areas have been identified, the major components of the MIE Initiative have been framed, and the strategy and implementation will begin. Summaries of the discussions, findings, and recommendations from the kick-off break-out sessions are below:

STEM Education/Workforce Development

STEM Education

The United States must engage the full diversity of our country and create a STEM workforce that looks like America to address the energy challenges facing our nation and to seize the economic opportunities that lie ahead. According to the U.S. Bureau of the Census, by the year 2050 there will no longer be a majority race. Latinos are the fastest growing population and are expected to grow from 17 percent in 2012 to 26.98 percent in the year 2050.

As a nation, we need to ensure minority students are involved in STEM education at the pre K-12, community college and four-year college levels. One example is to focus on President Obama's goal, preparing a 21st century workforce in STEM to produce one million STEM graduates and prepare new teachers in STEM over the next decade.

Participants from academia, non-profit organizations, industry and federal agencies, came together to showcase best practices and recommended solutions to common barriers shared by underrepresented minority communities.

Highlights:

- Historically Black Colleges and Universities (HBCUs) produce 19 percent of undergraduate science graduates and 20.1 percent of black undergraduate engineering graduates;
- Hispanic Serving Institutions, Tribal Colleges and Universities (TCUs), and Asian American Native American Pacific Islander Serving Institutions are having tremendous success at graduating Hispanic, Native, and Asian Pacific Islander students, respectively;
- Successful programs sponsored by federal agencies and non-profit organizations provide examples of best practices in engaging diverse students in STEM fields. Best practices include: exposure to STEM education and career opportunities, financial assistance, one-on-one mentoring, and research and development opportunities; and

- Collaborations have been the key to the success of smaller, under-resourced institutions, like most TCUs. These institutions have expanded their reach and impact by partnering with larger, better resourced institutions, research laboratories, federal and state agencies, and foundations and corporations.

Challenges:

- Inadequate preparation in grades pre K-12 is a major obstacle for students pursuing STEM. Programs aimed at literacy and remedial preparation in science and math are necessary to overcome this challenge;
- To address dropout rates, teenage pregnancies, and gang affiliations by partnering with collaboration scholars, literacy experts, sociologists, psychologists, and new-generation community leaders to design programs that shore up youngsters' self esteem, educational capacity and commitment to personal and social responsibility;
- To increase the number of minority students graduating with STEM degrees;
- Transition of minority students from community colleges to four-year and graduate degree programs; and
- Lack of underrepresented minorities that share similar experiences and strategies to create and support a network of young professionals in STEM.

Recommendations:

- Invest in early STEM education and literacy initiatives;
- Invest in broad STEM mentoring initiatives including pairing college students with middle and high school students;
- To increase the number of STEM early college pipeline programs;
- Invest public (federal and state) and private dollars in research, training, education and workforce preparation for Minority Serving Institutions (MSIs);
- Reform existing Parent Loan for Undergraduate Students (PLUS) Program policies to provide financial assistance to underrepresented minority students to attend and graduate from college;
- Design and execute a social marketing campaign highlighting the role of DOE in educating a diverse energy workforce to make STEM disciplines appealing to future professionals;
- Encourage, enroll, and graduate underrepresented minorities and females in STEM disciplines;
- Increase and support internships for STEM students entering the workforce that lead to a clear pathway to permanent jobs;
- Hire and retain additional underrepresented elementary and secondary STEM education professionals and administrators; and
- Develop and sustain energy and environment Ph.D. programs at MSIs.

Workforce Development

An estimated 60 percent of energy sector job growth will occur in skilled and technical jobs requiring up to two years post-high school training. These jobs are often overlooked in efforts to promote STEM education. These jobs are accessible for the majority of Americans who will not pursue a four-year degree. The Workforce Development panel consisted of industry, trade groups, and community college representatives. The conversation covered the drivers for increased workforce demand in blue collar and

semi-skilled jobs due to a retiring workforce, the rapid expansion of energy production in the U.S. related to technological advancements in fuel recovery, and new renewable energy generation.

Challenges:

- Lack of awareness of high paying energy related jobs;
- A reluctance to move or commute to where the jobs are;
- Lack of engagement in training, certification, and associate degree programs that would prepare people for these jobs;
- Negative view of the energy sector (especially oil and gas); and
- Lack of engagement by minorities in relevant unions that are the path to many of these jobs.

Opportunities:

- There is an overabundance of opportunities for high-paying jobs;
- The opportunity sells itself if we can just get the word out; and
- The production of oil and gas in new areas of the country provides for new opportunities.

Energy Economic Development

The global energy industry is a \$6-trillion economy that encompasses diverse energy sources from renewable to fossil, innovative energy efficiency technologies, transportation fuels, infrastructure, and supportive supply chains. With growing demand both domestically and abroad, and innovations in energy technologies, the importance of increasing minority participation in the energy sector is paramount. As minority communities are re-imagined with green technologies and innovative energy technologies are brought to market there is a great economic opportunity to be captured by minorities and minority communities.

The energy economic development session gathered feedback from members of the government, academia, and the private sector to understand the economic issues plaguing minority entrepreneurs and communities in the energy sector.

Economic impact, for the purposes of the MIE Initiative, is measured by three components:

- Capital (public funds, private investment);
- Employment/Job Creation (direct, indirect and salary ranges); and
- Revenue generated by energy-related firms (i.e., Minority owned businesses and energy-related firms that serve minority communities).

Highlights:

- Lack of access to capital, resources, and information from the private sector and federal agencies;
- Limited access to entrepreneurship opportunities in the energy sector inclusive of sustainability, oil and gas, energy efficiency, and renewable energy market segments; and
- Increase in public-private partnerships for economic impact.

Challenges:

- Decreasing support to minority businesses and educational institutions in the federal budget;
- Difficulty in getting access to loans and bonding from financial institutions;
- Late or lack of awareness of opportunities in the federal or private sectors; and
- Identification of appropriate federal, academic, and private partners to seek opportunities in the energy sector.

Recommendations:

- Allocate more federal research, development, and technology development funds for minority businesses and education serving institutions;
- Develop one universal application for applying for contracts and grants; and
- Modify federal bonding requirements.

Climate Change

The climate change panel used two domestic pillars of the President's Climate Action Plan to frame their discussions --a call to cut carbon pollution through utilizing clean technologies in fossil fuel power plants and bringing renewable energy resources online and the call for preparing the United States to invest in our building and transportation infrastructure to better prepare the country for impacts resulting from more severe weather. The panel participants discussed challenges facing minority and tribal communities, ways these communities can influence climate change policy and build capacity, and efforts that should be undertaken to ensure minority communities are aware of economic opportunities.

Challenges:

- Hurricane Sandy rebuilding efforts experienced local failures in organizing minority voices on climate change adaptation;
- Lack of resilient energy systems and plans for vulnerable communities to recover from the extreme weather disasters and economic costs resulting from climate change; and
- Failure to address high energy costs for low income and minority communities.

Recommendations:

- Convene regional public meetings and public engagement opportunities for minorities that will be integral to the development of compliance standards for power plants called for in the President's Climate Action Plan, led by the Environmental Protection Agency;
- Utilize the environmental knowledge of Tribal and Alaska Native communities;
- Create new business models for affordable electricity for minority communities; and
- Expand community engagement offices in the Energy Department and National Laboratories.