

Introduction

Good morning Chairman Rush, Ranking Member Upton and members of the Energy Subcommittee of the House Committee on Energy and Commerce. My name is Anne Pramaggiore and I am Senior Executive Vice President of Exelon Corporation and CEO of Exelon Utilities. Exelon operates six electric and three gas utilities, is the largest private operator of nuclear plants in the U.S. and participates in retail energy markets in 48 states. As the CEO of Exelon Utilities, I lead Exelon's six utilities, Atlantic City Electric, Baltimore Gas & Electric (BGE), Commonwealth Edison Company (ComEd), Delmarva, PECO and Pepco. Our utilities deliver electricity and natural gas to approximately 10 million customers in the cities and metropolitan areas around: the District of Columbia; Wilmington, Delaware; Chicago, Illinois; Baltimore, Maryland; Atlantic City, New Jersey; and Philadelphia, Pennsylvania. Thank you for the opportunity to share my company's perspective today as your Committee explores expanding opportunities in the energy field through the Blue Collar to Green Collar Jobs Act. We see tremendous opportunity in our industry as we transform the electric grid for the 21st century, and we are enthusiastically committed to creating pathways for the diverse people of the communities we serve.

The electric power industry is a major economic engine for America. In addition to supporting virtually every other sector of the economy, energy and electric power generate significant economic activity in their own right, providing high-quality jobs and business opportunities across the country. According to a 2017 report commissioned by the Edison Electric Institute and the American Public Power Association, the electric power industry is directly responsible for some 2.7 million jobs, a figure that is inclusive of workers at: investor-owned electric companies, public power utilities, electric cooperatives, and independent power producers; contractors and suppliers; as well as design, construction and other jobs connected to the electric

power industry's significant capital investments.¹ In total, when accounting for the jobs it creates and economic activity it enables, the electric power industry's economic impact is approximately \$880B, or approximately 5% of the nation's GDP.² That is our industry as it exists today.

Building the Workforce of the Future

The electric power industry, however, is anything but static. In fact, it is reinventing itself amid a second electric energy revolution. While the electric power industry served the 20th century U.S. economy and its citizens well, based on adhering to the three tenets of providing reliable, safe, and affordable power, the technological, economic, and social advances of the last 100 years have changed the world our industry now serves. As a result, the 21st century demands all that the 20th century did from our sector, and more. To reliable, safe and affordable we must add clean, resilient and connected.

- Clean to adapt to consumer preference and policy responses to climate change;
- Resilient to withstand more volatile weather and increasing security threats; and
- Connected to accommodate the expanding uses of electricity, especially the impending addition of the transportation sector to the electric system.

This will require a redesign of the electric power industry, both in physical configuration and function and of its economic and pricing model. As our industry connects to more customers, businesses, and devices, and plays a larger role in the economy, our social interface with customers

¹<http://www.eei.org/resourcesandmedia/newsroom/Pages/Press%20Releases/New%20Report%20Find%20U-S-%20Electric%20Power%20Industry%20Supports%20More%20Than%207%20Million%20American%20Jobs.aspx>

² <https://mjbradley.com/sites/default/files/PoweringAmerica.pdf>

and communities will also require a redesign. This represents the greatest transformation of this industry – and requires the most innovation – since its advent over 100 years ago.

Accomplishing this transformation will require both preparing our current workforce to meet these challenges, and cultivating a workforce of the future with skills and talents very different from our legacy workforce. This challenge is especially urgent considering the pace of technological and policy change and the rapid aging of the industry workforce. The average age of electric power industry employees is now reaching 50,³ and one quarter of electric and natural gas utility employees could retire within 5 years.⁴

As a corollary, in the next 10 years, job requirements in the electric power industry will include a need for more engineers to design the new grid to accommodate solar, wind and storage technology. The industry needs information technology experts to incorporate new cyber security technologies and to architect the communications systems that will allow for automation of grid functions necessary to run a grid with variable supply resources like wind and solar. The industry needs skilled high-voltage technicians who understand digital as well as analog technology, solar installers and wind turbine technicians to build out the new systems. The industry needs energy efficiency experts and increasingly electric transportation expertise to provide the opportunity to customers to reduce their bills and their carbon footprint. And of course, coders and software designers to create the platforms and apps that open up a new world of energy choice to customers. In other words, the industry needs experienced STEM (science, technology, engineering and math) workers to take our grid, and our industry, into the future. And increasingly the industry needs skilled craft workers, particularly in clean energy.

³ <https://www.popsci.com/aging-grid-aging-workforce-rising-demand>

⁴ <https://www.ibm.com/blogs/insights-on-business/energy-and-utilities/preparing-aging-utility-workforce/>

The future job market has two clear paths: STEM and clean. STEM careers are the fastest growing category of jobs in the U.S. and students with STEM degrees start with salaries 30 percent higher than those without STEM degrees.⁵ The clean energy workforce has skyrocketed in recent years, with the growth of solar and wind sectors rising by 24.5 percent and 16 percent, respectively, in a single year.⁶

As a result, the energy industry has a business imperative to help lead workforce development efforts in these fast-growing, good-paying fields and to support programs that produce the next generation of workers. The utility industry is unique in its relationship to its communities and its relationship to place. As universal service providers with an essential social purpose and with assets situated in virtually every community in the U.S., we are a place-based business that is physically embedded in the places we operate and naturally engaged in economic development, jobs, and the civic life of our community. As a result, job development programs in this sector of the economy can impact communities across the U.S.

Our employees are called out to work in the middle of the night, whether to replace a broken pole or work a bug out of an IT system and must necessarily be located in our community or nearby. Our companies have a unique interest in employing people who live right in our communities. This means ensuring that under-represented groups, including minorities, women and people with disabilities, are given access to the training, tools and educational opportunities that will position them to reinvent and lead this business in this new era.

Exelon Utilities' Workforce Development Programs

⁵ <https://finance.yahoo.com/news/stem-jobs-pays-much-long-142540588.html>

⁶ http://edfclimatecorps.org/sites/edfclimatecorps.org/files/edf_in_demand_clean_energy_sustainability_and_the_new_american_workforce.pdf

We are committed to diversity in the ranks of our skilled labor workforce and that commitment drove us to launch **CONSTRUCT**: a unique, nine-week job training program that increases employment opportunities in the utility and construction arena for minorities in Chicago and northern Illinois. Led by our Chicago-based utility ComEd, an alliance of 25 construction companies, four labor unions, and community organizations formed to prepare workers for entry-level jobs in construction, engineering, solar power, energy efficiency and project management. Our community organization partners identify candidates, the labor union and construction companies develop curriculum and the utilities and construction companies hire candidates. More than 500 participants have completed the CONSTRUCT program's 9-week "no-cost" training program in its 6 years of existence. And 80 percent of those participants were offered jobs by companies participating in the program.

Take LeeJohn Johnson, a father of two who was struggling to make ends meet when he joined the CONSTRUCT program. LeeJohn had a background in construction and during his time in the program, he learned the skills that were more specific to our industry. One of the companies participating in the COSTRUCT program hired LeeJohn after he graduated. Today, LeeJohn works for ComEd and he was just promoted to lineman in early January. LeeJohn told us no one in his life had ever seen him as a leader before, but our CONSTUCT instructor did. And now, LeeJohn is leading a ComEd crew of his own and earns a salary that will allow him to raise his two sons and support their educational and job aspirations in the future.

Right here in Washington, Pepco recently partnered with the District leadership to launch the **DC Infrastructure Academy**. Pepco and the District recruit, train and prepare residents for well-paying careers in the electric utility industry. In 2017 and 2018, the program launched in a limited way with classroom training that was geared to help students pass the utility industry

prerequisite CAST test – a test of basic energy, technology and math principles. While just recently launched, Pepco has hired 16 graduates from the program into positions such as cable splicer mechanics, substation technicians and trainee line mechanics.

Moving forward, Pepco and the DC Infrastructure Academy are expanding and developing a comprehensive 12-week Utility Training School in the District of Columbia modeled on ComEd's CONSTRUCT program. The curriculum will be robust and students will learn in the classroom as well as get hands-on technical training and physical training in a fully functional Utility Training Yard. Graduates from the program will possess the skills to succeed in overhead, underground, or transmission and substation positions and all successful graduates from the Utility Training School will be guaranteed a job at Pepco or one of the four other contracting firms in the District of Columbia.

Our utility BGE is developing talent at the high school level with its **Baltimore City Schools Partnership** which involves partnering with Baltimore City high schools to host conferences and workshops for high school students on the topics of construction, computer-aided design, engineering and automotive technology. Over the last three years 11 students from the program became BGE employees. In 2018 alone, BGE hired 50 high school students for summer internship programs.

On the generation side of our business, Exelon Generation has funded a **STEM Academy** program at Everett High School, which is located in a low-income, diverse community near its Mystic Generating Station. In fall 2018, Exelon Generation agreed to provide all 125 Everett High School STEM Academy students with their own laptop to use for schoolwork. In addition, Mystic personnel have volunteered to mentor STEM Academy students. There are also plans to donate robotic kits to the program to reduce the kit-to-student ratio in the robotics course.

Another aspect of our commitment to developing the workforce of the future is increasing opportunities for women and minorities in STEM fields. Although women hold 48 percent of jobs in the U.S. workforce, they hold just 24 percent of STEM positions. That is why ComEd launched the **Icebox Derby** to empower young women to become the scientists and engineers of tomorrow. Each summer, for the last five years, ComEd has selected 30 young ladies aged 13-18 from its communities to form “STEM” teams. Each team is given a refrigerator recycled through our energy efficiency program, a set of engineering drawings, and a ComEd engineer. The teams engineer electric race cars from the old refrigerators and race them at the end of the summer. In addition to exposing these young women to the STEM fields, ComEd has paired several with college opportunities and summer internships at ComEd.

Last year, Exelon launched a one week on-campus STEM experience for young women in Chicago and the District in conjunction with the United Nation’s HeForShe program. Exelon’s **STEM Innovation Leadership Academy** introduces young women to experiential learning projects, tours of science-oriented museums and STEM experts. This year, Exelon will add a program in Philadelphia as well.

The company has run weekend **Solar Spotlight** STEM camps during Black History Month and Hispanic Heritage Month to expose young people of both genders to STEM and technical careers. We invite middle and high school students from our communities to participate in an experiential learning project in which they construct a solar panel and engage with a companion STEM expert of color. Last year, the project produced solar powered emergency kits that were sent to Puerto Rico.

In a more broad-based effort, one that incorporates the new energy paradigm in an effort to demonstrate the capability of future technologies and simultaneously examine the social value

that can be produced, ComEd is building its **Bronzeville Connected Community of the Future** in a South Side neighborhood in Chicago.

Bronzeville will host the country's first microgrid cluster, connecting a ComEd-designed microgrid with an existing college campus microgrid, to test the efficacy of microgrids to enhance grid resiliency. ComEd has commissioned a local diverse engineering firm, KDM Engineering, to work with ComEd and other engineers in designing the microgrid infrastructure. As part of this project:

- ComEd launched a first-mile, last-mile electric vehicle ridesharing program for seniors;
- Bronzeville residents have access to an app that allows them to choose to donate monthly savings from energy efficiency programs to a school or community group;
- ComEd developed a 4-year, 70-hour curriculum at the local Dunbar high school around energy and STEM fundamentals using the energy project taking place in their neighborhood. We have conducted a technology "Ideathon" with scholarship money awarded to prize winners for 8 schools in the area: Bronzeville Scholastic Institute, De La Salle Institute, Hales Franciscan High School, King College Prep, Urban Prep Bronzeville, Walter H. Dyett High School for the Arts, Wendell Phillips Academy High School, and Young Women's Leadership Charter School.

We believe these community energy empowerment zones are a model for enhancing the quality of the grid, improving community quality and educating our young people around important aspects of the new energy paradigm.

Our perspective on inclusion is broad. We create meaningful job opportunities for people with disabilities who have historically high unemployment rates. Only 34 percent of adults with developmental disabilities are employed. This unfortunate statistic prompted our utilities ComEd

and PECO to launch the **Energy Force Program**, the country's first program that empowers people with intellectual disabilities to act as ambassadors and teach others about energy efficiency. ComEd and PECO train adults with developmental disabilities to serve as ambassadors for their energy efficiency programs, and the ambassadors attend community events to inform customers.

From rebuilding our skilled workforce to exciting young people about STEM to establishing an energy efficiency ambassador corps, Exelon, its utilities and generating companies are mentoring, training and employing American workers to be the workforce of the future.

Blue Collar to Green Collar Jobs Act

It's clear there are growing workforce opportunities in the energy industry. And as we work to build the workforce of the future, we welcome support from, and partnerships with, congressional, state and local leaders. With the demands on our industry for a 21st century energy system, the national effort laid out in the Blue Collar to Green Collar Jobs Act will help to ensure we have a diverse and inclusive workforce with the right skillsets to help us build this bold new energy future. Because electric and gas utilities sit in virtually every community in the U.S., the impact will be broad-based.

The Blue Collar to Green Collar Jobs Act is a major step forward in improving education and training for energy-related jobs and will be a tremendous asset in increasing the pool of skilled and diverse workers that our utilities need. The investments proposed in this bill will serve as a force multiplier, inciting others in the private and public sector to make these essential investments in creating the energy workforce of the future.

Innovation of necessity requires diversity: of identity, background, perspective, and experience. A diverse group of people sharing ideas and innovating together is truly the 21st century's competitive edge.

Conclusion

Now is the time to prepare for this energy future. We're eager to work with the Committee and other stakeholders to drive the vision of the Blue Collar to Green Collar Jobs Act forward.