

**Tamara Linde, Executive Vice President and General Counsel  
Public Service Enterprise Group**

**Subcommittee on Energy  
Committee on Energy and Commerce  
U.S. House of Representatives**

**“Powering America: Examining the State of the Electric Industry through Market  
Participant Perspectives**

**July 18, 2017**

Good morning Chairman Upton, Ranking Member Rush, and members of the subcommittee.

My name is Tamara Linde, and I am the Executive Vice President and General Counsel of Public Service Enterprise Group (PSEG). Thank you for the opportunity to present PSEG’s views on a critical issue facing the electric industry -- and by extension, our customers.

That issue is the urgent need to preserve the diversity and resiliency of the nation’s electric generation resource mix, and in particular, the need to address current flaws in the market design that threaten the viability of nuclear baseload generation.

In the Mid-Atlantic region where PSEG primarily operates, large baseload nuclear plants that fueled the economy for decades and are a critical part of the energy infrastructure are quickly becoming uneconomic as a result of a wholesale energy market design that fails to adequately value their attributes. The fact is that several nuclear plants in the United States have already shut down prematurely and owners of other plants have announced their plans to retire. Absent a change or an intervention in the very near future, reliable, much needed baseload resources that do not contribute to air emissions will permanently close, with implications far beyond any single corporate boardroom.

Before I elaborate on what is driving this predicament and what might be done to ensure that our electric system remains reliable and resilient for the long term, let me introduce my company. PSEG is a large, diversified energy company headquartered in Newark, New Jersey, and is among the largest electric companies in the United States. Our subsidiary Public Service Electric and Gas Company (PSE&G) owns and operates electric and natural gas distribution and transmission facilities and serves approximately 2.2 million electric customers and 1.8 million gas customers in New Jersey, many of whom reside in the state's most densely populated urban areas.

Another of our subsidiaries, PSEG Power, owns and operates approximately 11,000 megawatts of electric generation and sells the output from those generation facilities into the regional market known as PJM Interconnection, LLC (PJM), as well as wholesale electricity markets in New England and New York. PSEG maintains a diverse and well-balanced portfolio of electric power generation resources to meet customers' needs, including nuclear, natural gas, coal, and solar generation. While we currently are building three new natural gas plants in three states, it is worth noting that PSEG planned and built its diverse generation portfolio across many decades, and many of the facilities were built prior to the advent of competitive wholesale electricity markets. Thus, our belief in the importance of fuel diversity to our customers stretches back to the earliest days of our company.

To return to the problems facing nuclear, the 3,500 megawatt Salem and Hope Creek nuclear generating stations in southern New Jersey sit on the nation's second largest nuclear site and produce about 45 percent of the electricity in New Jersey. After more than 30 years of operation, PSEG's nuclear plants are not earning enough to cover their cost of capital. While we have not announced their closure, we have made it clear they are on an unsustainable path.

It may be surprising for Committee members to learn that large baseload nuclear plants in such a well-populated part of the country could be struggling financially. In fact, given the favorable location and size of these units, the fact that they *are* in economic peril may serve as a barometer for the severity of the crisis facing the entire nation's nuclear fleet, and the urgency facing policymakers who believe, as we do, that our country has something to lose with the erosion of fuel diversity and resiliency that would result from the premature closure of baseload generation, nuclear plants in particular.

While the economic stress facing PSEG's nuclear plants has a host of aggravating factors including significant additional regulatory costs imposed on nuclear plant operators by the Nuclear Regulatory Commission over the past 15 years, the proliferation of non-dispatchable renewable and demand-side resources enabled through federal and state tax policy, renewable portfolio standards and other regulatory treatments such as net-metering, the primary driver is a wholesale electricity market design that fails to adequately value and compensate these plants.

As for why this is the case, it may be instructive to examine how these markets have evolved over time. PSEG has a broad perspective on the evolution of electric wholesale markets administered by Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs) in the northeast. PSEG has operated in these markets since their inception in the 1990s and has been among the original handful of vertically integrated utility companies in PJM to champion the movement towards competition in its market. We have steadfastly supported the markets to date and actively participated in the regulatory and stakeholder processes to improve the markets because of the benefits that competition has brought in lowering prices, increasing innovation, and protecting customers. Market forces have driven investment in new more efficient generating resources and the retirement of older less efficient generating plants. Markets have also driven nuclear operators like PSEG to maximize output from nuclear units, making them more competitive and more efficient.

Notwithstanding these benefits, the wholesale market design problem we face now is rooted in the historical focus on driving efficiency gains without regard to important factors required for the long term reliability of the electricity grid, especially fuel diversity and resiliency. This is because competitive markets evolved around a diverse set of existing generation resources. In other words, markets weren't designed to drive to fuel diversity as an outcome, because fuel diversity in the generation fleet was always presumed.

Fuel diversity in electric generation was a reasonable expectation in the world prior to the shale gas revolution. Just as the discovery of near unlimited quantities of accessible natural gas has prompted a fundamental re-evaluation of our nation's ability to move from energy independence to energy dominance, we must also examine the impact of this revolutionary development on electricity markets, and make the design changes needed to ensure we avoid the irreversible loss of critical infrastructure, including nuclear resources.

Because time is of the essence for the Salem and Hope Creek stations, in New Jersey we have begun to discuss with policymakers what is at stake if PSEG's nuclear plants close their doors, including the fact that air emissions will increase and the cost of building alternative replacement resources will be higher than the cost of preserving the existing plants. The economic impact facts are also compelling, with hundreds of millions of dollars contributed to the state economy, including 1,600 full time jobs at our plants, and a \$30 million contribution to the local tax base. But far and away the most critical concern we have put before state policymakers is the need to ensure the resiliency of electric supply against all manner of unforeseen contingencies. If PSEG's nuclear plants were to close, the overwhelming majority of remaining generation in New Jersey would be natural gas.

Whether it's a polar vortex, a cyber intrusion, a fuel supply interruption or another event we can't imagine today, the utility mantra has always been to have an additional line of defense to deal with unexpected events. It's in our DNA to strive to build a system where we are not overly reliant on any single facility – or any single fuel source – to ensure the availability of the life-giving commodity our customers rely on.

The North American Electric Reliability Corporation sums it up by saying that “having a portion of a resource fleet with high reliability characteristics, such as low forced and maintenance outage rates and low exposure to fuel supply chain issues, is one of the most fundamental necessities of a reliable Bulk Power System.”<sup>1</sup> Nuclear generation covers all of these bases.

Mr. Chairman, the challenges facing PSEG’s nuclear plants are not unique. States such as Illinois and New York have already acted to prevent premature losses, and others such as Ohio, Connecticut and Pennsylvania are considering how they can take steps to prevent the premature closure of critical baseload generation. These efforts all take different forms, but what they have in common is the sense of urgency with which they are being pursued. Indeed, given the time constraints facing many of these at-risk plants, and given the absence of timely and effective action at the wholesale market level, state action emerges in many cases as the only viable option in the short term. We believe state actions can be taken in a way that do not disrupt the operation of the competitive markets, but can be a bridge until regional or federal solutions take hold. Accordingly we urge the Committee in its deliberation on Federal Power Act reform to respect the lawful ability of states to act to retain these critical assets.

In addition, Mr. Chairman, you have done much to encourage FERC to maintain its focus on ensuring that the true price of electricity is accurately reflected in the market in order to

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<sup>1</sup> Synopsis of NERC Reliability Assessments at page 4, May 9, 2017.

support sustained investment, otherwise known as price formation. We applaud you for these efforts, and when the FERC returns to a quorum under new leadership we believe it will be important for the Commission to tackle this issue with even greater urgency. We look forward to working with you and other like-minded members of the Committee to continue to emphasize this as a priority.

Longer term, but equally important is broader reform of the way generation resources are valued and priced in the market. We have been encouraged by recent dialogues with regional grid operators that suggest the magnitude and urgency of the problem is beginning to bring the attention it deserves. FERC should require the RTOs to undertake these reforms immediately to ensure that the system is able to provide the diversity of resources needed to respond to the vast array of changing conditions, and ensure the bulk power system is not just reliable but resilient. More specifically, we need to address energy market design, which currently drives supply in a way that disadvantages certain resources such as baseload generation.

Finally Mr. Chairman, it bears mentioning that you have brought a diverse panel of stakeholders together for this hearing, with varying perspectives and priorities. Over the years this Committee has seen a variety of debates within the electric sector over preferred business models, fuel types, regulatory constructs and other issues. At the end of the day, we understand that you are obligated to look beyond winners and losers among us to find the right solutions for the customers and communities you represent, and for the country as a whole.

We believe that the potential loss of a sizeable percentage of the nation's nuclear fleet raises issues well beyond the scope of an individual company or even a specific state. For starters, nuclear energy and the technology behind it is one of the great American innovation stories. We should give careful consideration to the implications on our global competitiveness and our STEM pipeline of losing this primacy.

Second, these plants have literally been the engines behind local and regional economic growth for decades, not just for the electrons they generate but also for the hundreds of thousands of well-paying, high-quality jobs, and the funding for schools and police stations and local businesses in communities across the country. Nationwide nuclear energy contributes \$10 billion in federal taxes and \$2.2 billion in state taxes each year.

Finally, our nuclear regulatory and operational framework is the envy of the world, and for very good reason. It is in our fundamental national security interest to ensure that this remains the case. After all, our global leadership drives the adoption of U.S. nuclear safety and security standards elsewhere in the world. Similarly, it is in the clear interest of our national defense to ensure that our civilian reactors, and the supply chain they support, remains robust. It is time to think of the U.S. nuclear supply chain as critical infrastructure, just as we regard our national highway system, electric grid and drinking water infrastructure.

I thank you for the opportunity to share the views of my company this morning, and I would be glad to answering any questions you may have.