VIA ELECTRONIC MAIL

The Energy Master Plan Committee
New Jersey Board of Public Utilities
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Re: Comments on New jersey 2019 Energy Master Plan

Exelon Generation Company, LLC ("ExGen") appreciates the opportunity to provide initial comments in response to the Board of Public Utilities' (BPU) request for comments on the 2019 New Jersey Energy Master Plan (EMP). ExGen appreciates the vision of the Administration and supports the implementation of programs to preserve and expand carbon free resources such as nuclear, renewables, energy efficiency and energy storage. This expansion of clean energy resources provides tremendous energy, clean air, health, and economic benefits to all of the residents and businesses in New Jersey. To reach deep decarbonization goals, New Jersey should recognize that all carbon-free resources should be encouraged. This will in turn maximize the full benefits of electrifying the transportation, building, and industrial sectors.

There are several trends the state and the BPU should be mindful of as the development of the EMP unfolds and we plan for New Jersey's clean energy future. There is growing climate change awareness and activism among New Jersey residents and businesses. New Jersey's awareness and activism is growing while markets continue to reflect low to flat demand growth, unprecedented low natural gas prices, and an expansion of renewable resources. These enduring consumer and market trends inform ExGen's comments.

As background, ExGen owns approximately 33,300 megawatts ("MW") of generation, including nuclear, fossil, hydroelectric, solar, landfill gas, and wind generation assets. In addition, ExGen markets wholesale energy and capacity products to municipal, cooperative, and investor-owned utilities, retail suppliers, retail energy aggregators, merchant participants, power marketers, and major commodity trading houses. ExGen is also a major supplier of electricity to New Jersey consumers at retail through our Constellation business. Constellation serves residential, commercial and industrial customers as well as municipal aggregation programs throughout the State and has developed 35.4 MW of installed solar on behalf of its customers in New Jersey.

Based upon its experience in New Jersey and elsewhere, ExGen submits the following comments to aid in the development of the EMP.

Zero Emission Credit Program Advances 100% Clean Energy by 2050

The EMP should account for the new Zero Emission Credit (ZEC) program and, more broadly, the overall role nuclear resources play in reducing emissions in New Jersey and the region. The State Legislature's vote and Governor Murphy's signature to preserve nuclear generation resources are laudable, strategic policy decisions and represent a critical part of ensuring New Jersey's environmental future. The ZEC program was enacted because they recognized that nuclear generation resources make a significant contribution to New Jersey air quality and provide vitally important environmental, health and economic benefits to New Jersey customers. Historically, energy consumers across the state have seldom been aware of the actual generation source of their electricity. This is changing however as more consumers seek to both reduce their energy consumption and de-carbonize their supply. In parallel, the state is implementing more aggressive environmental and energy policies like the ZEC program.

New Jersey's nuclear plants provide nearly half the power generated in the state, and account for over 90 percent of its emission-free power. The Brattle Group conducted a study which revealed that retaining New Jersey's Hope and Salem Creek facilities would avoid an increased reliance on fossil generation that would occur in the absence of the nuclear plants, resulting in higher emissions of carbon and other air pollutants.[1] The study found that almost the entirety of the replacement power would be fossil-fired and, as a result, seriously frustrate New Jersey's clean energy goals.[2]

Nuclear generation resources help the State avoid carbon and air pollution costs and generate hundreds of millions of dollars in economic activity annually. The ZEC program is anticipated to deliver environmental and economic benefits that outweigh costs by a factor of 6 to 1 – including preserving New Jersey's main source of carbon-power. As the largest component of New Jersey's energy policy on carbon reduction to date, the ZEC Program should be factored into the development of New Jersey's EMP.

Definition of Clean Energy Must Include Nuclear Generation

For purposes of the EMP and reaching Governor Murphy's goal of 100% clean energy usage in New Jersey by 2050, "clean energy" must be defined to include *all* zero carbon resources, including nuclear. Climate change is upon us and requires bold action, now. New Jersey is all too familiar with the consequences of climate change - extreme weather and rising sea levels chief among them. It was in that spirit that ExGen supported the landmark legislative package establishing New Jersey's leadership in the clean energy economy. Included in that set of bills is New Jersey's ZEC program, which recognizes the environmental and resilience attributes associated with nuclear power. For purposes of the EMP, it's important to once again acknowledge that the operating characteristics and environmental attributes of nuclear are unique among electricity generation technologies and offer an undeniable edge to New Jersey as it endeavors to

[1] *Salem and Hope Creek Nuclear Power Plants' Contribution to the New Jersey Economy*; The Brattle Group, November 3, 2017: http://files.brattle.com/files/13065_11755_salem_and_hope_creek_nuclear_power_plants_contribution_to_the_new_jersey_economy1.pdf

[2] *Id.*

achieve significant carbon reduction goals. Nuclear generation offers stable, efficient 24/7 power *without emitting carbon*. Greenhouse gases from fossil fuel generation have a lasting effect on the atmosphere so it is critical that we take advantage of and recognize the value of nuclear generation.

In concert with the ZEC legislation, Gov. Murphy signed a bill bolstering the renewable energy standard, reforming New Jersey's solar program, codifying the goal of 3,500 MW of offshore wind by 2030, and advancing the state's energy efficiency goals. The bill also established a community solar energy program and codified the Governor's energy storage objectives – 600 MW by 2021 and 2,000 MW by 2030. Just like the ZEC program, these programs and the associated generation resources should be accounted for in New Jersey's EMP and included in the definition of "clean energy."

The recent report released by the United Nations' Intergovernmental Panel on Climate Change offers clear evidence and outlines the dire consequences of climate change. For purposes of the EMP, the report supports immediate and aggressive action. The panel found that if greenhouse gas emissions continue at the current rate, the atmosphere will warm up by as much as 2.7 degrees Fahrenheit (1.5 degrees Celsius) above preindustrial levels by 2040, inundating coastlines and intensifying droughts and poverty.[3] As the largest source of emission-free electricity in New Jersey and the Nation, nuclear generation must be included in the definition of "clean energy" given the urgency of the climate change crisis.

Overall Cost and Customer Impacts Are Primary Obstacle to 100% Clean Energy by 2050

The most significant obstacle to achieving 100% clean energy by 2050 is cost and customer impacts. The retirement of baseload carbon-free resources could result in significant environmental costs and customer impacts, particularly as New Jersey's environmental goals and statutory mandates increase. A recently released MIT Study on nuclear energy addresses this very topic. Specifically, the study analyzed energy policy costs and found that the availability of firm low-carbon resources consistently reduces the system cost of decarbonizing power generation.[4] Further, the study found that the cost of full decarbonization without baseload resources is from 42% to 163% higher in a state like New Jersey. Overall, the MIT study indicates that including firm resources like nuclear generation in the portfolio of available low-carbon technologies is a more robust strategy for achieving affordable deep decarbonization of power generation.[5]

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[3] *Global Warming of 1.5°C, an IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*; The Intergovernmental Panel on Climate Change, October 8, 2018: http://www.ipcc.ch/report/sr15/.

[4] *The Future of Nuclear Energy in a Carbon-Constrained World*; MIT Energy Initiatives, September 3, 2018: http://energy.mit.edu/wp-content/uploads/2018/09/The-Future-of-Nuclear-Energy-in-a-Carbon-Constrained-World.pdf

[5] *Id.*

Other State Policies Support 100% Clean Energy by 2050

ExGen recommends that New Jersey rejoin the Regional Greenhouse Gas Initiative (RGGI) as soon as practicable, and at a meaningful cap level. As a longtime supporter of RGGI, ExGen was gratified that Governor Murphy signed Executive Order No. 7 on January 29th, 2018 mandating that New Jersey rejoin RGGI. New Jersey rejoining RGGI in this fashion would send a strong signal to New Jersey stakeholders and other states in the region that New Jersey intends to remain a leader in the climate change fight and the clean energy economy. Additionally, New Jersey must do more to encourage change in the electric sector as the state pursues electrification of other sectors.

ExGen also recommends New Jersey and the BPU take an active role in advocating for market reforms designed to preserve and expand carbon-free electricity generation in the PJM territory. The EMP should include advocacy initiatives that support carbon pricing and regulatory alternatives that shift the generation mix region-wide toward carbon-free generation.

Beyond joining RGGI and advocating for the implementation of a carbon price, the EMP should consider achieving its carbon reductions goals via the implementation of a carbon-free electricity portfolio standard. A new, carbon-free electricity portfolio standard could be structured to complement the existing Renewable Portfolio Standard (RPS) with a long-term goal of reaching 100% carbon-free energy by 2050. This would further the goal of cost-effectively reducing the carbon emissions from electricity generation, which is necessary to see the full benefits of electrification efforts.

Conclusion

ExGen appreciates the willingness of the Governor, the BPU, and participating State departments to consider our comments as it moves forward with establishing New Jersey's 2019 Energy Master Plan.

Respectfully,

/s/ John P. Slocum

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