



November 15, 2019

Via Electronic Mail (EMP.comments@bpu.nj.gov)

The Energy Master Plan Committee
New Jersey Board of Public Utilities
44 South Clinton Avenue, 3rd Floor Suite 314
Trenton, NJ 08625-0350

Re: Comments on the Draft New Jersey 2019 Integrated Energy Plan

Exelon Generation Company, LLC (“ExGen”) appreciates the opportunity to provide comments in response to the Energy Master Plan Committee’s (“EMP Committee”) request for comments on the 2019 New Jersey Draft Integrated Energy Plan (“IEP”). As background, ExGen owns over 32,000 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, power marketers, and major commodity trading houses. ExGen is also a major supplier of electricity to New Jersey consumers at retail through its 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 final Energy Master Plan (“EMP”).

The IEP’s extensive modeling provides a well-informed and rational evaluation of the least-cost pathways to achieve New Jersey’s 2050 goals of 100 percent clean energy. ExGen agrees with the IEP that New Jersey can achieve its deep decarbonization goals with existing technologies,¹ as long as it utilizes all available carbon-free energy resources, including existing nuclear, new and existing renewables, energy efficiency and energy storage.

Nuclear Energy is Foundational to New Jersey’s Decarbonized, Affordable, Reliable, and Diverse Energy Future

According to the IEP, in 2018 more than half of New Jersey’s electricity was generated by natural gas power plants.² Electricity generated by these plants represents nearly all the State’s

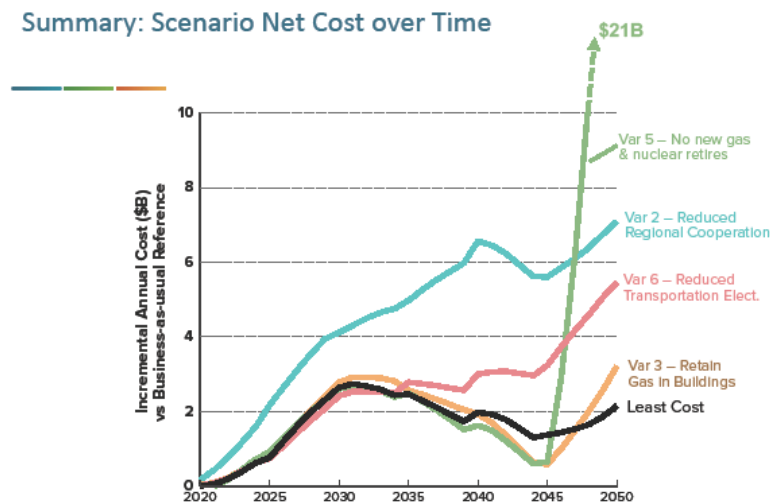
¹ See Rocky Mountain Institute, *New Jersey Integrated Energy Plan, Public Webinar*, Slide 16 (Nov. 1, 2019) available at <https://nj.gov/emp/pdf/NJ%20IEP%20Public%20Webinar%20Nov1%20Final.pdf> (“IEP Webinar”).

² IEP Webinar at Slide 8.

electricity sector greenhouse gas emissions, totaling 17 MMT³ (million metric tons) of carbon. In contrast, nuclear and renewable energy resources produce zero greenhouse gas emissions or other criteria air pollutants. Last year, nuclear power resources, accounted for over 40 percent of the total power generated in the state while renewable energy generation represented only about 5 percent of the mix. Following the closing of Oyster Creek, New Jersey's oldest nuclear plant, the state lost over 600 MW of zero-emission generation capacity and as a result the state's share of electricity from nuclear, its largest source of carbon-free generation, dropped by 10 percent. Across all IEP scenarios,⁴ the remaining nuclear plants are assumed to stay online at least until their licenses expire:

- Salem Unit 1 stays online until 2036
- Salem Unit 2 stays online until 2040
- Hope Creek stays online until 2046

After those dates, most IEP scenarios (called variations in the slides) assume the nuclear plants remain online if doing so is part of the most cost-effective path to meet electricity needs and emissions targets.⁵ However, Variation 5 does not apply the most cost-effective path to meet New Jersey's electricity and greenhouse gas needs and commitments, instead assuming the nuclear plants retire when their licenses expire.⁶ The most important consequence of retiring the state's nuclear fleet at their license expiration is a staggering \$19 billion per year net cost increase between 2045 and 2050 compared to the least-cost case, as shown in the figure from Slide 44 reproduced below.⁷



³ IEP Webinar at Slide 7.

⁴ IEP Webinar at Slide 14.

⁵ Notably, the model assumes significant increases in offshore wind and energy storage build. It also shows a sizeable storage duration increase to address renewable resources' lack of dispatchability.

⁶ IEP Webinar at Slide 13.

⁷ IEP Webinar at Slide 44.

That is more than 60 times the annual cost of the zero emissions credit (“ZEC”) program⁸ and by far the largest increase in net costs across all scenarios in the IEP analysis.

The various IEP scenarios show that New Jersey must not only foster new clean resources but must also stay committed to supporting existing clean energy resources, if it is to deliver a cost-effective pathway to a clean energy future. Thus, New Jersey’s nuclear generation fleet has a critical role to play in achieving New Jersey’s deep decarbonization goals affordably.

Also, in addition to being reliable and cost-effective, nuclear plants are major contributors to economic growth for New Jersey’s local communities. In its 2017 [report](#)⁹, The Brattle Group evaluated the contribution that the Salem and Hope Creek nuclear power plants in New Jersey make to the State’s economy. Brattle considered how the plants affect electricity markets and prices, as well as in-state production activity and studied the ramifications of these factors throughout New Jersey’s economy. Brattle’s analysis showed that during the ten-year period spanning 2018–2027, the Salem and Hope Creek plants operating in New Jersey will:

- Contribute approximately \$809 million annually to state gross domestic product (GDP);
- Account for 5,800 in-state jobs (direct and secondary);
- Help keep electricity prices low - New Jersey consumers would pay \$400 million more for electricity annually, about \$3.3 billion more in present value over the next ten years, without these two plants;
- Fund \$37 million in state tax revenues annually;
- Avoid 13.8 MMT of CO₂ emissions annually over the next ten years, valued at \$585 million per year; and
- Avoid significant amounts of other air pollutants annually, valued at \$148 million per year.¹⁰

Deep decarbonization in response to climate change requires bold, immediate action.¹¹ To this end, ExGen applauds the efforts of New Jersey policymakers and the Murphy administration to establish ambitious greenhouse gas reduction and clean energy goals for New Jersey.¹² Without such efforts, the impact of climate change will grow year after year, damaging the environment, harming human health, threatening the economy, and increasing national security risks. The IEP modeling analysis shows that growing, not reducing, the total zero-carbon energy production in

⁸ The cost of the ZEC program is about \$280 million per year based on a \$10/MWh ZEC price and 28 million MWh per year of nuclear plant output.

⁹ Mark Berkman & Dean Murphy, *Salem and Hope Creek Nuclear Power Plants’ Contribution to the New Jersey Economy*, (November 2017) (“Brattle Report”).

¹⁰ Brattle Report at p. 5.

¹¹ See, e.g., Lempert, et al., *Pathways to 2050, Alternative Scenarios for Decarbonizing the U.S. Economy* (May 2019), available at <https://www.c2es.org/document/pathways-to-2050-scenarios-for-decarbonizing-the-u-s-economy/>; Clean Air Task Force, *Potential Human Health Impacts Associated with Retirement of Nuclear Power Plants in Illinois* (Oct. 2019), available at <https://www.catf.us/resource/retirement-of-nuclear-power-plants-in-illinois/>.

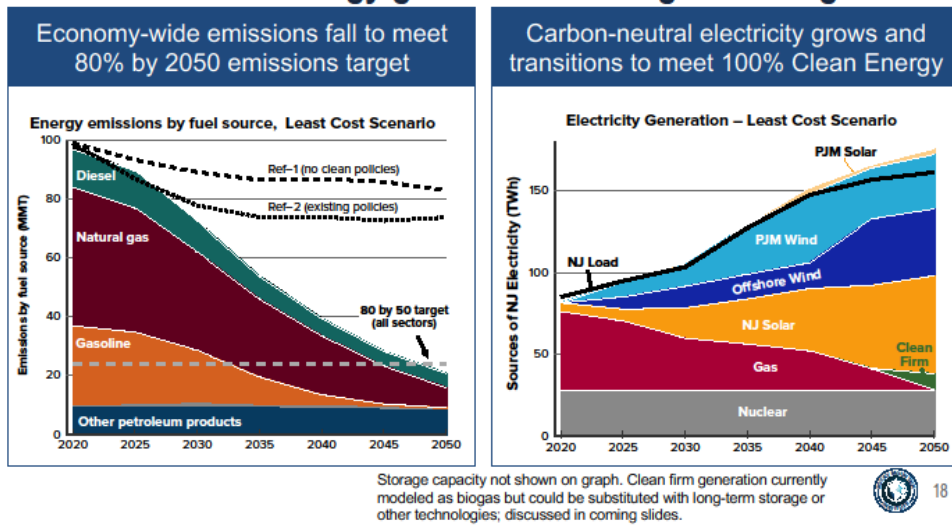
¹² IEP Webinar at Slide 9.

New Jersey will help the State reach its decarbonization goals. We encourage policymakers to take note of these findings and remain focused on recognizing nuclear for its contributions to decarbonization.

Existing policies reduce emissions but are not sufficient to meet GWRA and 100% Clean Energy targets.

In the absence of a nation-wide program to price carbon emissions, a number of states, including New Jersey, have taken the lead in adopting ambitious decarbonization policies. To this end, an increasing number are now supplementing renewable portfolio standards with technology-neutral policies to ensure that new clean generation does not displace existing clean generation. The IEP analysis provides powerful evidence that maintaining and growing New Jersey’s zero carbon emission resources provides the most effective way to meet the Global Warming Response Act (GWRA) emissions reduction goals and Governor Murphy’s directive for “100% Clean Energy by 2050.”¹³ The EMP defines “100% Clean Energy by 2050” to mean 100% carbon-neutral electricity generation. As shown in the figure below (from Slide 18), New Jersey can meet its decarbonization goals if it uses all existing zero carbon technologies, including nuclear resources.

New Jersey can meet Global Warming Response Act and 100% Clean Energy goals with existing technologies



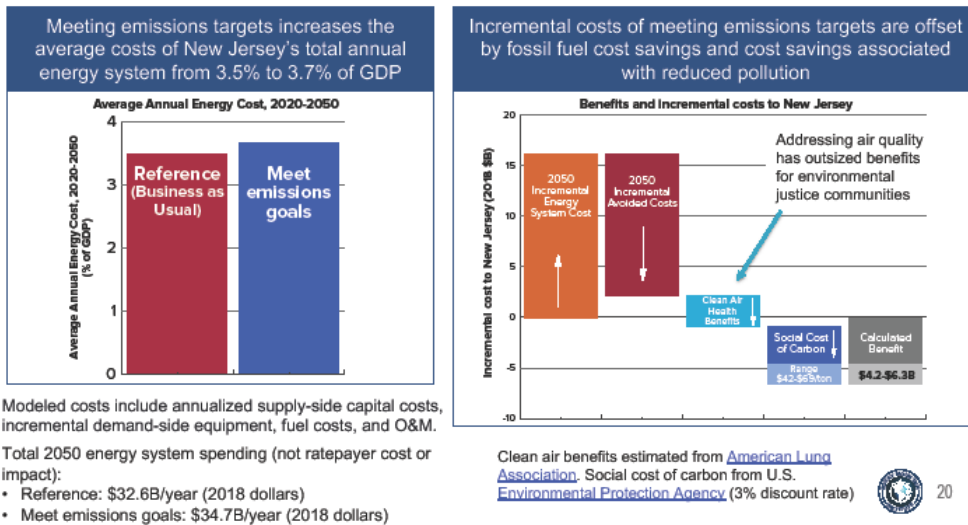
On the other hand, if states with nuclear generation assets choose to exclude nuclear from the definition of clean energy and fail to maintain programs that recognize the carbon emission avoidance value of nuclear generation, they will reverse virtually all of the carbon-reduction gains that have been achieved in recent years and time, a precious asset in the fight against climate change, will be lost.¹⁴

¹³ IEP Webinar at Slide 18.

¹⁴ Dean Murphy & Mark Berkman, *Impacts of Announced Nuclear Retirements in Ohio and Pennsylvania*, available at http://files.brattle.com/files/13725_nuclear_closure_impacts_-_oh_pa_-_apr2018.pdf, (April 2018).

New Jersey is all too familiar with the consequences of climate change - extreme weather and rising sea levels chief among them. It is critical that the EMP Committee and New Jersey policymakers continue to acknowledge that the operating characteristics and environmental attributes of nuclear generation offer critical benefits to New Jersey as it endeavors to achieve its carbon reduction goals. The IEP report includes a benefit versus incremental cost analysis that shows a benefit to New Jersey consumers of between \$4.2 and \$6.3 billion (2018\$)¹⁵ (as reflected in the slide below) and concludes that “incremental costs of meeting emission targets are offset by fossil fuel cost savings and cost savings associated with reduced pollution.”¹⁶

Costs to meet NJ emission targets are small compared to total energy system spending, and offset by clean air benefits



At a July 24, 2019 U.S. House Energy and Commerce Committee hearing, World Resources Institute’s Senior Fellow Karl Hausker said “[i]t’s risky to ‘bet the climate’ on any single set of technologies. The United States should greatly expand its zero-carbon generation now with low-cost wind and solar, while aggressively investing in research, development, and demonstration of a broad portfolio of zero-carbon electricity options, given the many uncertainties related to the evolution of any single technology¹⁷.” ExGen agrees that strategic planning for a decarbonized, reliable, diverse, and affordable generation mix must include all existing and emerging zero-emission technologies, including nuclear. This is particularly true as New Jersey

¹⁵ See IEP Webinar at Slide 20.

¹⁶ *Id.*

¹⁷ *Hearing on Building America’s Clean Future: Pathways to Decarbonize the Economy Before the H. Comm. On Energy and Commerce*, 116th Cong. (July 24, 2019) (testimony of Karl Hausker, Ph.D. Senior Fellow, U.S. Climate Program, World Resources Institute), available at <https://docs.house.gov/meetings/IF/IF18/20190724/109843/HHRG-116-IF18-Wstate-HauskerK-20190724.pdf>.

and other jurisdictions expand their efforts to decarbonize other sectors of the economy through electrification.

Conclusion

ExGen appreciates the opportunity to provide comments on the draft IEP and looks forward to working with the Murphy administration, New Jersey policymakers, the BPU, and the EMP Committee to move toward a decarbonized, clean energy future.

Respectfully submitted,

/s/ Jesse A. Rodriguez

Jesse A. Rodriguez
Director, Energy Policy Analysis
Exelon Generation Company, LLC
300 Exelon Way
Kennett Square, PA 19348
Phone: 610-765-6610