Ms. Sherri L. Golden RMC
Secretary of the Board
New Jersey Board of Public Utilities
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June 12, 2024

RE: Docket No. QO24020126
In the Matter of the 2024 New Jersey Energy Master Plan Update

Dear Ms. Golden

Thank you for the opportunity to comment on the above referenced docketed matter. We look forward to reviewing and commenting on the draft 2024 Energy Master Plan (EMP) Update as developed based on the responses to the 2024 EMP Update Request for Information (RFI). The comments below are intended to assist in the ongoing process to help BPU develop and implement the updated 2024 EMP.

The 2019 EMP documented, in an integrated approach, the least cost method to achieving the 2019 EMP clean energy goals. The integrated analysis documented that the 2019 EMP clean energy goals were achievable with current technologies with just a 0.2% increase in total energy cost over 30 years between 2020 and 2050. Further the 2019 EMP documented that the benefits to cost ratios of achieving those goals were estimated at over 2 to 1 which defines the 2019 EMP as cost effective. The 2024 EMP update needs to likewise perform a similar integrated analysis of the full New Jersey energy systems and not just on the BPU regulated energy systems.

The 2019 EMP was a good first step in an integrated plan but mostly focused on the costs and benefits within the electric system. This is appropriate given the goals to electrify the building and transportation sectors. But the 2024 EMP update has to do this evaluation one step better than the 2019 EMP to evaluate all the New Jersey energy systems in an integrated manner.

The New Jersey electric system has benefits and costs through its interconnectedness to the larger electric transmission grid as detailed in the 2019 integrated modeling and evaluation. The 2019 EMP documented the transmission system that might need to be upgraded to meet the 2019 EMP goals. Similarly, there are costs and benefits for the states interconnectedness to the larger petroleum and natural gas transmission systems. These larger energy grid system impacts beyond New Jersey need to be included in the overall 2024 EMP Update analysis. Specifically which systems and infrastructure will need to be expanded and increase and which energy systems and infrastructures will be reduced and decrease, including the overall costs, avoided costs or savings and benefits to New Jersey consumers.

That 2019 EMP integrated analysis documented that the existing policies of the 2018 Clean Energy Act, the existing energy regulations and the current energy Executive Orders were not sufficient to achieve the 2019 clean energy goals. The State has since update a range of those policies. The 2024 EMP Update needs to describe, in detail, those updated policies, rules, regulations and Executive Orders and the overall cost and benefits those updated policies updates will have in achieving the updated EMP goals.

Currently grid supply solar and wind, as documented by EIA's levelized cost of electricity (LCOE), even without subsidies are the least cost ways to make electric energy. Even accounting for the intermittent capacity factor in the EIA levelized avoided of electricity (LACE), grid supply solar and wind, even without subsidies, are the most economically way to deliver electricity to customers.

Putting that cost effective electricity into EVs and cold climate heat pumps (ccHP) is 3 to 5 times more energy efficient on a site basis than the amount of energy needed to fuel a similar fossil fuel car or heating system. EV and ccHP are more energy efficient even on a full lifecycle basis accounting for both source and site energy. Since the issuance of the 2019 EMP, the costs for these technologies have trended downward and the energy performance of these technologies has improved and enhanced over the years. The 2024 EMP Update needs to highlight these lower costs and increased benefits over the estimates in the 2019 EMP.

The 2024 EMP update needs to evaluate the current suite of energy efficiency and renewable technologies that are cost effective that can be implemented with lower subsidies and/or have reached market transformation and that can be developed and implemented without incentives and subsidies. It will be critical to achieving the new 2024 EMP updated clean energy goals to prioritize the current incentives and subsidies.

The 2024 EMP update needs to evaluate not only the increases in electricity usage and costs but the decreases total energy usage and costs overall. In addition, while evaluating the increase in electricity usage and costs are important, so is the increase in electricity revenues. Increased revenues that may exceed the cost to upgrade and modernize the electric distribution system. The 2024 EMP Update needs to evaluate the increases in electric revenues over cost that will put downward pressure on electric rates and may assist large electric users to stay competitive in a global market.

The 2024 EMP Update needs to evaluate the benefits of a fully integrated distributed energy resource (DER) system. This DER system would include distributed solar and storage (both electric and thermal energy) along with highly efficient homes and businesses that have installed high efficient shell measures; EV and EV charging systems; building electrification technologies including heat pump technologies and induction stoves; and grid efficient interactive building (GEB) technology that can deliver flexible demand and loads. These DER systems and technologies need to be viewed and evaluated as one system not in separate sectors and with separate strategies, but as one holistic and integrated system.

The focus on the 2019 EMP and most energy plan modeling is on central “clean” power plants delivering clean electricity 24/7 through the transmission system. The distributed energy resources (DER) are thrown in as an after-thought in this modeling analysis. No current energy plan modeling evaluates the full benefits and reduced cost of a fully integrated DER system. The 2024 EMP Update need to include detailed modeling and evaluation of an integrated DER system of technologies that can advance New Jersey’s clean energy goals sooner and at lower costs.

For each new and existing home and business that individually installs solar and storage, both electric and thermal storage, EVs and EV chargers, that installs high efficiency shell measures , that manages the building thermal energy needs with cold climate heat pump technology and installs grid efficient and interactive building (GEB) technologies with flexible load lowers there is an individual demand on the energy systems.

Evaluated separately, in separate sectors and with separate strategies, the increased and enhanced use of DER systems including distributed solar, distributed thermal and electric storage, EV and EV charging, enhanced building shell measures and weatherization, and GEB with flexible load will be viewed as a cost, especially if designed with incentives and subsidies. Evaluated separately and in separate sectors and with separate strategies these separate DER technologies will be an impact and cost on the overall energy systems. But evaluated in a more integrated manner, the DER technology systems will collectively have a lower overall energy

costs and enhanced benefits to the overall New Jersey transmission and distribution (T&D) energy systems.

A lower cost in the New Jersey petroleum, natural gas and electrical T&D systems if evaluated and managed in an integrated and holistic manner. The 2024 EMP Update needs to evaluate DER systems including distributed solar, distributed thermal and electric storage, EV and EV charging, enhanced building shell measures and weatherization, and GEB with flexible load in new and existing homes and businesses as one system and as one sector in a holistic approach.

To do those things requires good planning and this 2024 EMP Update needs reinforce the need for integrated planning across the State. First, in the regulated energy systems of BPU with Integrated Distribution Planning (IDP) that ensures an open and transparent grid with two-way communication that provides for flexible demand and grid interactive efficient buildings; and second with an Office of Integrated Energy Planning within BPU - the State Energy Office.

Thank you for the opportunity to provide comments on this very important clean energy issue. We look forward to the 2024 EMP Update draft. The above comments are submitted to assist in advancing the State's progress towards its goal of 100% clean energy. Please feel free to contact me on any further follow-up.

Very Truly Yours

Michael Winka

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