

Advanced Energy Management Alliance

Comments on

Draft Integrated Energy Plan for the State of New Jersey

November 15, 2019

Thank you to the Governor’s office, Board of Public Utilities (“BPU” and, collectively, “state”), and Rocky Mountain Institute (“RMI”) for allowing significant stakeholder input to the Energy Master Plan (“EMP”) and this key component of the EMP, the Integrated Energy Plan (“IEP”). Advanced Energy Management Alliance (“AEMA”) members have met with BPU staff, and attended and presented at nearly all of the stakeholder meetings. We were pleased to see that the Energy Master Plan draft released June 10 contains many ideas regarding demand-side resources and we shared written and verbal comments in response.

This is AEMA’s first opportunity for input to the Integrated Energy Plan process. AEMA members participated in the full November 1st webinar¹ and greatly appreciated the opportunity to learn about the modeling underway.

About AEMA.

AEMA is a trade association under Section 501(c)(6) of the Federal tax code whose members include national distributed energy resource companies and advanced energy management service and technology providers, including demand response providers, as well as some of the nation’s largest demand response and distributed energy resources. AEMA members support the incorporation of distributed energy resources, including advanced energy management solutions, to achieve electricity cost savings for consumers, contribute to reliability and resilience, and provide sustainable solutions for a modern electric grid. These comments represent the collective consensus of AEMA as an organization, although they do not necessarily represent the individual positions of the full diversity of AEMA member companies.

Recommendations Related to Demand-Side Technologies.

AEMA respectfully shared the following recommendations on the Integrated Energy Plan modeling:

- We recommend that the Integrated Energy Plan (“IEP”) state clearly the assumptions around demand-side resources. During the November 1st webinar, AEMA members asked questions to learn more about the assumptions around demand-side flexibility. As

¹ Slides from the November 1st presentation:
<https://nj.gov/emp/pdf/NJ%20IEP%20Public%20Webinar%20Nov1%20Final.pdf>

an answer, we learned that smart water heaters and electric vehicle charging were modeled as flexible resources. This was not stated in the presentation. We support the inclusion of these resources in the modeling but we have questions as to how and why these specific demand-side resources were chosen, while others were not. We recommend that the Final Integrated Energy Plan state clearly the details around specific demand-side flexibility assumptions as they may help inform future Energy Master Plan recommendations.

- More importantly, AEMA recommends that the next round of scenarios include at least one specific scenario clearly to quantify the distinct impacts of broad control of customer electric demand spanning all end-uses. Just as New Jersey is considering expansion of supply side clean energy resources, the state is also considering what the impacts will be for demand-side control for economic and renewables-smoothing purposes. This scenario is likely to inform the least-cost pathway, as well, since demand response, along with its “sibling”, energy efficiency, are often the cheapest resources. However, demand response is distinct from energy efficiency and should be analyzed separately from passive energy efficiency technologies.
- In this specific demand-side scenario, it is vital that additional demand-side resources are recognized for their important value in reducing peak demand affordably. Smart water heaters and electric vehicle charging are important sources of flexibility, but barely scratch the surface of what is already occurring in New Jersey and could be achieved by 2050. Demand response is a mature technology already deeply engrained in commercial, industrial and residential sectors and it does not appear to be included in the current model, except for specific applications discussed above. Process loads, lighting, space heating and cooling and other end-uses are already broadly controlled in New Jersey via PJM’s programs, and could be leveraged by the state utilities for additional value. Demand response is anticipated to grow to impact a broader range of end-uses, including transportation (smart electric vehicle charging), plug loads (smart appliances), and home heating and cooling as these end uses are electrified. All demand response applications should be included at reasonable growth rates.

- In terms of modeling, emergency demand response resources should be considered a supply resource and compete with generation resources to supply installed capacity. In modeling overall energy demand, demand response resources that are dispatched in economic order as energy or ancillary services should be included and help reduce the overall megawatts (“MWs”) needed. Some resources perform both functions and can be modeled as such.
- The IEP is a complex model, including sophisticated inputs. We recommend additional transparency in the Final IEP regarding the IEP modeling approach. Slides 10-12 of the November 1st presentation are very high level, and to ensure ultimate value of the study it would also be important to understand more detailed assumptions. For instance, what was the basis for cost assumptions used to determine economic merit order dispatch under the scenarios?

Additional Comments on the Draft Integrated Energy Plan.

AEMA submits these brief comments on the Integrated Energy Plan analysis provided by Rocky Mountain Institute. AEMA appreciates the fine work of the BPU and RMI for their thoughtful approach to system modeling, with the aim of ensuring that New Jersey can meet its policy goals along a least-cost pathway, while exploring key specific scenarios, as well. The scenarios reflect a number of useful input assumptions across a number of relevant sectors, from transportation electrification to offshore wind development.

Our primary recommendation to improve the modeling would be to expand the level of ambition expected from the category of demand-side flexibility, both in the immediate term and later decades. The model already takes into account some potential measures, such building retrofits and energy efficiency, but does not appear to fully incorporate the level of demand-side flexibility that electric customers are capable of even today, let alone under conservative estimates of the future.

For example, there are currently 614.8 MW² of demand response resources registered with PJM from customers sited in New Jersey, who are providing critical grid benefits via both load curtailment and on-site generation. That includes both 508.4 MW delivering load management and 192.2 MW providing economic demand response. As a resource, these

² MWs do not sum to 614.8MW due to overlapping registrations.

customers alone represent around 3% of New Jersey's installed capacity, but do not appear to be reflected in the current modeling approach.

Of course, PJM load management and economic demand response are not the only resources that such customers can provide, if the services are properly valued. For example, AEMA member companies help New Jersey customers enter PJM's synchronized reserve market, in which they pledge additional capacity in order to protect the grid in case of future emergencies, often caused by either load forecasting inaccuracies or loss of generation or transmission. Indeed, beyond the initial focus on where each MWh of energy will come from, the energy future envisioned by New Jersey (and other states in PJM, and neighboring New York) will almost certainly require increased quantities of ancillary services, including synchronized reserves and frequency regulation. Customer-sited resources, whether generation, energy storage or advanced load curtailment, are technically capable of providing those services today, and will become increasingly able to do so in the future.

The examples above reference benefits provided to the PJM grid from the flexibility of customers in New Jersey, but there are also “in-state” flexibility approaches worthy of modeling. For example, the Clean Peak Standard being deployed in Massachusetts will ensure that an increasing percentage of the state's peak electricity demands (which tend to have the highest marginal emissions) are met with clean resources. Eligible projects include demand response, standalone energy storage and storage paired with existing or state-contracted renewables. Once a signal of their value is established, customer-sited resources such as load curtailment will help to meet the state's energy goals, and this is an approach worthy of consideration in New Jersey's modeling efforts.

Conclusion.

AEMA appreciates the opportunity to submit comments for consideration by the New Jersey Administration as the state finalizes the Integrated Energy Plan and Energy Master Plan. Please consider AEMA a resource in identifying data sources and successful program solutions for deploying demand response and distributed energy resources across New Jersey. AEMA believes that, with the right policies and transparent price signals, these resources can provide benefits to all consumers while growing jobs and stimulating the economy in New Jersey. Please

do not hesitate to contact us should you have any questions regarding this testimony.

Respectfully Submitted,

A handwritten signature in black ink that reads "Katherine Hamilton". The signature is written in a cursive, flowing style.

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