December 7, 2020

New Jersey Board of Public Utilities
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Submitted via email: EnergyEfficiency@bpu.nj.gov

Re: Advanced Metering Infrastructure (AMI) Working Session, Docket No. EO20110716

To Whom It May Concern:

New Jersey Sustainable Business Council, The Natural Resources Defense Council, Environment New Jersey, New Jersey Conservation Foundation, NJPIRG, and the Energy Efficiency Alliance of New Jersey ("Joint Commenters") are pleased to submit these comments on New Jersey's implementation of AMI. Joint Commenters offer the recommendations herein to help the Board of Public Utilities establish AMI infrastructure that is cost effective and leveraged to meet its full promise of accelerating New Jersey's transition to a clean energy economy by empowering consumers and unlocking a flexible, bi-directional, and communicative energy grid.

Such cost-effective and well-designed AMI will be key in achieving New Jersey's long-term clean energy and environmental objectives by changing how utilities, customers, and third-party providers manage electricity. In the near term, it can aid the state in realizing more savings through energy efficiency and peak demand reduction programs. In the long term, it will lay the groundwork for a transition to a clean, resilient energy grid as essential technology needed to enable distributed clean generation and microgrids to interact with the grid.

But the rollout of AMI must be regulated, implemented, and overseen properly to fully realize these benefits. Joint Commenters have outlined key policies below we believe the BPU should follow to ensure that AMI empowers consumers and is done in a cost-effective manner.

1. Adopt statewide minimum performance standards for New Jersey's AMI infrastructure with forward-looking customer privacy and data protection protocols; data analytics and management that will allow the reliable, safe, and efficient coordination of DER operation with grid-connected resources.
2. Require consumer education and consumer accessible data with implementation to empower consumers to take control of their energy use and introduce them to the technology.
3. Require utilities to implement AMI enabled and enhanced energy efficiency and peak demand reduction programs to achieve the full realization of consumer benefits, including a critical review process and performance metrics.

Joint Commenters have expanded on these points below.

1. **Adopt statewide minimum performance standards for New Jersey's AMI infrastructure with forward thinking customer privacy and data protection framework.**

To ensure that the AMI technology in New Jersey is leveraged to meet its full promise of accelerating New Jersey's transition to a clean energy economy the BPU needs to establish minimum technological capabilities for AMI meters and programming statewide. Joint Commenters recommend BPU look to Advanced Energy Economy's minimum standards for Advanced Metering Functionality.[1]

Specifically, Joint Commenters believe that the baseline of technology for AMI should include:

1. Collection of customers' usage data, in near real-time, usable for settlement in relevant retail and wholesale markets;
2. Automated outage and restoration notification;
3. Two-way communication between customers and the electric distribution company;
4. With customers' permission, communication with and control of smart devices;
5. Large scale conservation voltage reduction (CVR) programs, also called or Volt-VAR Optimization (VVO);
6. Remote connection and disconnection of a customer's electric service (while maintaining consumer protections); and
7. Measurement of customers power quality and voltage.

These minimum standards ensure the technology that is installed will work for consumers for a longer period of time and incorporate more benefits.

To secure customer privacy and protection of the AMI network Joint Commenters propose that the BPU adopt the Mission: Data 10-point framework of a comprehensive energy data sharing policy.[2] This framework will balance consumer rights and security with the ability to conveniently access energy information and energy management technologies that will become available with AMI implementation. Furthermore, this framework provides consistency in data-sharing policy from state to state and utility to utility. It also outlines a process to assist state commissions in the treatment of data access and privacy, avoiding any pitfalls or piecemeal planning. Finally, this framework incorporates Green Button Connect My Data (GBC) as a standard for sharing customer data and enabling third party applicants. Ensuring utilities consistently implement the GBC standard and best practices can provide customers access to third party programs and platforms, which creates open competition in the marketplace and allows for additional businesses to improve upon the consumer experience.

[1] AEE (Advanced Energy Economy), Advanced Metering: Connectivity for the Modern Grid, 2017, available at https://info.aee.net/hubfs/PDF/Advanced-Metering.pdf.

[2] Murray Michael, Laura Kier, and Bob King, P.E., Energy Data, Unlocking Innovation with Smart Policy, December 2017, available at: https://static1.squarespace.com/static/52d5c817e4b062861277ea97/t/5a3a8c66c8302509260492b2/1513786475950/Energy-data-unlocking-innovation-with-smart-policy.pdf.

In the near future, the BPU should also ensure that AMI specifications and capabilities provide an expandable foundation so that consumers, DER providers, and other market participants have meaningful access to usable data.[3]

2. **Require consumer education and consumer accessible data with implementation to empower consumers to take control of their energy use and introduce them to the technology.**

AMI devices and their integration into the customer experience will empower customers to make changes and improve their energy efficiency experience.[4] But in order to effectively do so, the BPU needs to ensure that installation includes customer education and engagement in every step of the installation process.

Education coupled with the installation of an AMI meter can be a key first introductory step into what is to come in this technology space. Pre-installation communication with customers is essential to gaining customer buy-in and ensuring customer satisfaction throughout the AMI implementation process. This should cover what the device is and how energy usage information will be accessed and shared. Post-installation, data and education should be provided to customers in an easily digestible format such as a dashboard or app that leverages existing digital engagement tools.

Taking these steps now will integrate the features of AMI into a customer's routine, allowing for easier adaptation of additional technologies and programs in the future. For an example of a successful education program the BPU can look to Maryland, where the Public Service Commission required BG&E to file a customer education plan to help customers utilize the benefits offered through AMI along with deployment of the meters.[5]

Developing technologies are increasingly allowing for cross-appliance communication, enhancing in-home efficiency. AMI will be the first step in this process for many customers. It is important to not only highlight this connection as AMI is implemented, but also include AMI as an integral part of any program deployment from here out. Customer education and engagement around installation are crucial pieces of any plan to maximize the value of AMI investment.

3. **Alongside installation, the BPU should require utilities to implement programs that ensure full realization of consumer benefits that includes a critical review process and performance metrics.**

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[3] The BPU can look to the NY PSC Proceeding Regarding Strategic Use of Energy Related Data, Matter 20-M-0082.

[4] Northeast Energy Efficiency Partnerships, Advanced Metering Infrastructure: Utility Trends and Cost Benefit Analyses in the NEEP Region, page 7, February 2017, available at https://neep.org/sites/default/files/resources/AMI%20FINAL%20DRAFT%20report%20-%20CT%20format.pdf. [hereinafter "NEEP 2017"]

[5] NEEP 2017, page 7.

Real energy efficiency savings and peak demand reduction are increased when technology is paired with additional program offerings from utilities "that enable, motivate, and support customers to take actions and make changes to modify their energy use."[6]

An ACEEE report published in 2020 highlighted the significance of including customers in customer engagement tools, pricing strategies, and programs with incentives and services to increase the benefits of AMI devices.[7] The same study also found that utilities are largely missing the opportunity to utilize AMI data to improve their energy efficiency and demand response offerings, in part due to regulatory, administrative, and technological barriers. Moreover, implementing these programs will ensure more benefits accrue to the ratepayers and enable them to take full advantage of this technology. Joint Commenters recommend that the BPU mandate that utilities include the following programs in their AMI implementation plans. Further, Joint Commenters recommend the BPU and utilities consider how AMI can be a component in all programs deployed from here on out.

a. AMI programs that grow energy efficiency and reduce peak demand.

Energy Efficiency and Peak Demand Response Programs

In order to maximize the value of AMI investment, the BPU can require utilities to implement behavioral programs, time of use (TOU) rate structures, and demand response programs with installation of meters through these types of programs, which drive energy savings and give customers options to modify their energy use. Customers gain more granular data access and direct communication of meter readings, which can also be used to achieve energy savings. Behavior and pricing signals such as demand response, peak time rebates, TOU rates, and high bill alerts — all enabled by AMI — can lower customer bills, improve customer satisfaction, and maximize the value of the utilities' AMI investment.

Behavioral programs that provide insights into customer-specific usage patterns, such as home energy reports or high bill alerts in an app or on a device, are estimated to result in 1-8% savings. TOU rate structures will incentivize customers to shift their energy usage to off-peak times, lowering demand on the grid when needed most.[8] ACEEE has estimated that pricing with time-varying rates can result in 1-7% energy savings.

This data can also be used in customer targeting and recruitment practices for other utility programs, as well as third-party programs and platforms. Examples include identifying a home for an energy efficiency audit or rebate program, and proactive outreach to enroll customers in TOU or peak demand reduction based on usage patterns. While some of these programs will have to be brought in overtime as technology and appliances develop, some can be launched with the installation of AMI devices.

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[6] Rachel Gold, Corri Waters, and Dan York, Leveraging Advanced Metering Infrastructure To Save Energy, American Council for An Energy Efficient Economy, January 2020, page iv, available at: https://www.aceee.org/sites/default/files/publications/researchreports/u2001.pdf. [hereinafter "ACEEE 2020"]

[7] See ACEEE 2020.

[8] NEEP 2017, page 32.

Volt Var or Conservation Voltage Reduction Programs

BPU should also mandate a conservation voltage reduction (CVR or Volt Var) program or pilot within each service territory. These programs reduce voltage used by the grid while maintaining service.[9] When implemented with AMI these programs can add an additional 1-4% of energy savings.[10]

Use of Automated Outage Notification to Improve Restoration Response

Finally, BPU should make sure that utilities leverage the technology available to them with AMI to improve outage notification and restoration. AMI will provide utilities with the capabilities to "detect, isolate, and respond to outages quicker than current capabilities."[11] This is an especially important issue given the history of storms and the grid infrastructure in the state. As New Jersey works to secure a more reliable grid, AMI can enable quicker notification and restoration capabilities, and in the long term allow for an easier transition to storage and microgrids, providing alternatives to alleviate storm resiliency issues.

b. Use of a critical review process to monitor implementation and participation in programs.

To ensure that AMI is properly rolled out with customer education, full realization of customer benefits, and proper utilization of the technology to achieve state goals, Joint Commenters recommend that the BPU establish an EM&V process to monitor installation of AMI, utilization of its benefits by the utility, and customer participation.

For program implementation, a critical review process akin to the EM&V process for energy efficiency programs for assessing program impacts can help with customer outreach and adaptation by providing input on education plans and measuring their success in various sectors of the state. Further, it will provide a forum to measure the added benefit of AMI data for energy efficiency and peak demand reduction programs in the state. This will allow programs to change and adapt based on performance, market conditions, and state policy goals.

Looking to next steps in New Jersey's clean energy goals, AMI will play a part not just in updating technology on the grid but in the incorporation of more advanced electric technology, such as storage and microgrids. A process to encourage the state to look ahead in its policies and successes can ensure AMI is used to its fullest extent.

c. Performance metrics for utility AMI portfolios that can measure consumer benefits of AMI and incentivize programs that benefit consumers and New Jersey clean energy goals.

Joint Commenters recommend that the BPU establishes performance metrics for AMI enabled and enhanced programs, as such metrics will ensure AMI data is utilized and captured efficiently and the investment will provide the most benefits to consumers.

[9] ACEEE 2020, page 29.
[10] ACEEE 2020, page vi.
[11] NEEP 2017, page 3.

Creating performance metrics can set clear and reasonable standards for programs, which can ensure a baseline of performance and consumer access to cost savings opportunities. The metrics can measure qualitative benefits such as job creation, social acceptance, consumer inclusion, and environmental benefits. Metrics can also measure quantitative benefits such as installations, participation rates, consumer adoption; and consumer bill savings.[12]

To incentivize participation, the metrics could include incentives such as an opportunity for an adjustment in shareholder compensation based on performance or actual savings realized.[13] The BPU could reference a program in Vermont that has metrics: Green Mountain Power (GMP) qualitatively measures societal benefits of its AMI deployment, such as commercial and industrial outage cost reduction, decreased energy costs, and energy conservation connected to AMI-based web portals.[14]

Conclusion

The Joint Commenters appreciate the opportunity to recommend how the BPU can implement AMI in a manner that is cost effective and accelerates New Jersey's transition to a clean energy economy by empowering consumers and unlocking a flexible and communicative energy grid.

Thank you for your time and consideration.

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[12] NEEP 2017, page 34.
[13] ACEEE 2020, page 37.
[14] NEEP 2017, page 23.