

Advanced Energy Management Alliance

Testimony on

Draft Energy Master Plan for the State of New Jersey

July 17, 2019

Thank you to the Governor’s office and Board of Public Utilities (“BPU” and, collectively, “state”) for allowing significant stakeholder input to the Energy Master Plan (“EMP”). Advanced Energy Management Alliance (“AEMA”) members have met with staff, and attended and presented at nearly all of the stakeholder meetings. We presented and submitted testimony as well as formal comments in the working group and overarching process of development of this plan. We were pleased to see that the Energy Master Plan draft released June 10 contains many of our ideas regarding customer-sited resources; we will provide additional details on implementation strategies in our testimony here as well as in future proceedings as appropriate.

AEMA members stand ready to make millions of dollars of additional investment in the Garden State’s clean energy future. However, our members seek clarity on compensation for the services that clean, distributed energy resources provide to move forward with our business investments. We recommend that the Final Energy Master Plan either clarify these policies or specify the process by which the state will establish those policies over the next years in the Murphy Administration.

Introduction.

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 (“DR”) providers, as well as some of the nation’s largest demand response and distributed energy resources (“DER” or “DERs”). 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.

General.

AEMA believes that by allowing private sector involvement as much as possible, innovative and cost-effective solutions for consumers are enabled; this draft EMP encourages and takes strong steps in that direction. Certain program structures can maximize that private sector involvement—for example, clear guidance on future procurements or incentive programs would be important. The challenge will be to find the right balance of pricing that dynamically adapts to system needs, while providing program participants some degree of certainty that can lower financing costs. AEMA was pleased that many of our comments and ideas were taken into consideration in developing the draft EMP. As the state implements these policies, it will be important to leverage and learn from other state programs and solutions that have had failures and successes along the way.

Non-Wires Alternatives and Distributed Energy Resources.

AEMA strongly supports the non-wires approach for state-funded, as well as, utility ratepayer projects. When preparing to instruct state property managers and utilities to propose and adopt non-wire solutions, guide rails will be beneficial to ensure that the leveraged private sector investments deliver as much of the value as possible, rather than playing a minor role as

part of a box-ticking exercise. The recommendation to "develop a mechanism to compensate DER for its full value stack at the regional and federal level"¹ is to be commended.

While New Jersey is a leader on these issues, AEMA believes that the state can still take lessons from states that have already implemented some version of a “value stack” approach to DER compensation. For example, a key trade-off is between ensuring that prices paid for that value stack are flexible enough to incentivize the right resource mix as grid needs change across geography and time, while ensuring enough forward revenue certainty to allow private actors to successfully finance equipment of value to the grid. There has been progress in this area in New York, such as an allowance for some participants to lock the distributional and locational compensation levels of their value stack for a ten-year period.² Massachusetts has also been a leader in developing effective policy mechanisms through the SMART program. This program provides long-term revenue certainty (10-20 years), which reduces financing risks and in turn, lowers the soft costs to solar and storage investment. The total program costs can be predicted with certainty and the incentive declines with the declining cost of solar, which is necessary for ratepayers.³ We think that learning from the lessons of New York and Massachusetts will benefit New Jersey as it implements this policy.

Given the long and successful history of New Jersey-based resources delivering value to the region, particularly as active participants in PJM's wholesale market, AEMA urges that the state focus attention on stacking value from the existing resources to provide new economic and environmental services to the state including, peak shaving and Transmission and Distribution

¹ Draft Energy Master Plan, page 49.

² Additional information about New York value stack can be found here: <https://www.nyserda.ny.gov/All%20Programs/Programs/NY%20Sun/Contractors/Value%20of%20Distributed%20Energy%20Resources>

³ More information on the Massachusetts SMART program can be found here: <http://masmartsolar.com/>

deferral (also called “Non-Wires Alternatives”). As of June, 2019 there are 1,500 New Jersey end-use electricity customers enrolled as emergency load response resources at PJM. These customers currently represent 400 MW of virtual, clean power plant capacity. These customers are physically capable of providing peak shaving to reduce the zonal peak to reduce capacity costs and also to dispatch on a more local level for T&D deferral, if New Jersey were to put the appropriate policies in place to identify the value of such services and dispatch customers to perform them. These policies that are enacted in nearby states put money into the hands of local businesses for helping to maintain the grid, while also saving the state millions or billions of dollars in energy and transmission costs. In addition, this curtailment can help avoid dirty energy production, which is often the dirtiest at peak times.⁴

Finally, AEMA was pleased that the Energy Master Plan recognized the value that Smart EV Charging provides to the grid and we applaud the recommendation that utilities introduce programs that maximize the EV charging resource to the grid. We recommend that the final Energy Master Plan include a clear process forward for establishing or moving ahead with existing utility proceedings on Smart EV Charging.

Energy Efficiency.

The EMP has identified Energy Efficiency measures as “the first, most affordable, and most accessible action” to achieving the goal of 100% clean energy by 2050.⁵ It has also identified advocating for appropriate compensation of the full value stack that Demand Response, Energy Storage, and other forms of DR that contribute to the grid, but with no

⁴ See McAnany, James, *Demand Response Operations Markets Activity Report: June 2019*. PJM Interconnection. Figure 1, estimate of AECO, JCPL, PSEG, and RECO Load Management Locations and MWs. Available: <https://pjm.com/-/media/markets-ops/dsr/2019-demand-response-activity-report.ashx?la=en>

⁵ Draft Energy Master Plan, page 99.

mention of Energy Conservation Measures (ECM) contribution. The state should require that third-party providers remain an option for ratepayers to claim energy efficiency credits from the PJM Reliability Pricing Model (RPM), therefor maximizing funding for new construction or renovations when using Energy Efficient equipment.

If utilities claim exclusive control over the regulated Energy Efficiency Programs in their territories, the absence of meaningful competitive pressures to engage in Energy Efficiency will provide little hope to the rate payer of being properly credited for their Energy Efficiency efforts in the Reliability Pricing Model (“RPM”) Capacity Market, due to limitations placed on program participation, while still exposing the rate payer to some risks. There are risks associated with capacity market participation that should not be borne by consumers or by a regulated utility, but are appropriate for independent third party Energy Efficiency providers to bear in a competitive market.

Third Parties provide access to PJM’s RPM Capacity Market including M&V, administration, market monitoring and required collateral. They bid into the Base Residual Auction (“BRA”), for maximum value, and assume all risks associated with the Market. The business model is proven and has provided many customers and partners millions of dollars from the Market. In some cases the revenue stream from the RPM Capacity Market makes the difference between having an Energy Conservation Measure (ECM) implemented or not.

Energy Storage.

While the EMP mentions energy storage, AEMA believes that additional data should be taken into consideration when determining the full energy storage potential for the state. While

the New Jersey Energy Storage Analysis (“ESA”) by Rutgers University⁶ had not yet been publicly released at the time that the draft EMP was released, the EMP incorporates some of the feedback from that report. Specifically, the EMP notes that the ESA finds that battery energy storage is not cost effective, stating, “while costs for battery storage systems are dropping rapidly, the predominant chemistry Lithium-ion systems may not be cost-competitive for most applications through 2030.”⁷ Given the gigawatt-hours of battery energy storage being deployed around the country in both high and low electricity cost states (e.g. Arizona, Colorado, New York, California, Florida),⁸ it’s clear that the EMP and ESA err in stating that battery energy storage is not cost-effective. Although the ESA is generally comprehensive, we note several flaws in this analysis, most notably that it does not analyze distribution deferral/offset value.⁹ AEMA believes that the analysis flaws include:

- 1) Lack of thorough analysis on distribution-supporting storage, which probably provides the highest benefit of any type of service provided by storage systems. Instead, the minimal discussion on distribution value focuses primarily on the integration of photovoltaics;¹⁰
- 2) Unavailable cost estimates for transmission and distribution upgrades;¹¹
- 3) Cost assumptions are higher than experience would dictate;¹² and

⁶ See New Jersey Energy Storage Analysis (ESA) Final Report, May 23, 2018:

<https://www.bpu.state.nj.us/bpu/pdf/commercial/New%20Jersey%20ESA%20Final%20Report%2005-23-2019.pdf>

⁷ Draft Energy Master Plan, page 57.

⁸ See, e.g., S&P Global, “Amid Global Battery Boom, 2019 Marks New Era for Energy Storage,” January 11, 2019, <https://www.spglobal.com/marketintelligence/en/news-insights/trending/9GIYsd7qF8tNpiopwH7KSg2>; and Wood Mackenzie, “Q2 2019 US Energy Storage Monitor,” June 2019, <https://www.woodmac.com/research/products/power-and-renewables/us-energy-storage-monitor/>.

⁹ See examples of cost-effective replacements and deferrals here: <https://www.utilitydive.com/news/despite-failures-coned-targets-more-energy-savings-from-non-wires-pioneer/547725/> and here: <https://www.utilitydive.com/news/storage-will-replace-3-california-gas-plants-as-pge-nabs-approval-for-wor/541870/>

¹⁰ ESA Report, pages 155-158.

¹¹ ESA Report, page 7.

- 4) The lack of inclusion of value stacking,¹³ which is critical for the cost-effectiveness of storage.

There is much evidence of the cost-effectiveness of battery storage, even in states with lower energy costs than New Jersey, which the state could leverage in implementing a robust energy storage program. For example, AEP Texas proposed two distribution deferral projects that would have been five to ten times cheaper than the traditional distribution upgrades (\$2.3M versus \$11-22M) based on the distribution value alone, even without value stacking).¹⁴ A recent New York Department of Public Service storage report showed cost-effective storage amounting to 1,500 MW of energy storage by 2025, and between 2,800 and 3,600 MW by 2030, resulting in \$3B in gross lifetime benefits.¹⁵ Massachusetts's Department of Energy Resource commissioned a report that found \$2.3B in total system benefits at the optimal level of storage deployment of 1,776 MW.¹⁶ AEMA believes that a more complete picture of the benefits of energy storage, including customer-sited storage, is warranted—including taking lessons from states that have already enacted policies and seen direct results—to fully grasp the potential benefits for New Jersey.

Advanced Metering.

¹² The ESA Report assumes \$324-660/kWh for li-ion 4 hour storage in 2020 (pg. 34), however, AEMA members have found that actual costs are the low side of that estimate, closer to Bloomberg New Energy Finance's estimate of \$330/kWh (Bloomberg New Energy Finance, "1H 2019 LCOE Update," March 26, 2019).

¹³ ESA Report, page 9.

¹⁴ AEP cost-effectiveness is found in the Texas PUC Docket 46368, Application of AEP Texas North Company for Regulatory Approvals Related to the Installation of Utility-Scale Battery Facilities, Application at 2–3 (Sep. 16, 2016).

¹⁵ New York Department of Public Service, "Order Establishing Energy Storage Goal and Deployment Policy," Case 18-E-0130, December 13, 2018, at pg. 3.

¹⁶ Massachusetts Energy Storage Initiative, "State of Charge," September 2016, at pg. xi.

We applaud the EMP position that Advanced Metering Infrastructure (“AMI”) is a foundational component of modernizing the distribution grid and that AMI will enable implementation and utilization of customer side technologies. The reliability benefits that can be realized by grid edge intelligence have proven to be invaluable when dealing with the effects of severe storms and nature disasters.¹⁷ AEMA believes, however, waiting for one business case to be reviewed and evaluated could slow the advancement of these technologies and services to the ratepayers. AEMA recommends that the BPU evaluate each EDC case individually, and concurrently, if possible. The EMP draft states that a foundational component of a modernized distribution grid is AMI, which can provide granular data about energy use and costs, such control should include new rate designs, such as Time of Use rates to incentivize customers to reduce energy use during periods of peak demand.¹⁸ Other rate design tools, such as peak-time rebates that provide refunds to customers who adjust their energy consumption upon utility request, have also proven effective.¹⁹ In addition, we urge the state to ensure reasonable standards for third party data access are in place.

In August 2017, Rockland Electric Company (“RECO”) initiated an AMI case study throughout its service territory in Northwest New Jersey. In its Order approving the case study, the BPU issued a moratorium on pre-approval of AMI rate recovery to the other electric distribution companies until the RECO AMI case study was completed and a Cost-Benefit Analysis (“CBA”) was performed and assessed. The BPU is dependent upon the results of the analysis to assess best practices of incorporating AMI and related hardware and software and to guide the other electric distribution companies into making the most prudent investments. This

¹⁷ An example is Florida Power & Light improving service reliability by 25% in the last five years, see article: <https://www.tdworld.com/distribution/fpl-hardens-system-against-storm-outages>

¹⁸ Draft Energy Master Plan, page 78.

¹⁹ An example is Baltimore Gas and Electric’s program, Raab Associates report here, page 21: [http://www.raabassociates.org/Articles/Brattle%20Dynamic Pricing and Demand Response.pdf](http://www.raabassociates.org/Articles/Brattle%20Dynamic%20Pricing%20and%20Demand%20Response.pdf)

BPU moratorium on pre-approval of smart meter installation remains in effect until completion of the CBA on the RECO AMI case study. AEMA urges that, upon completion of the CBA and the final Energy Master Plan, the BPU should consider issuing recommendations to utilities for accelerated AMI installation in a strategic, coordinated, and efficient manner so the state can begin realizing the benefits of a connected grid while also containing costs.

Conclusion.

AEMA appreciates the opportunity to submit comments for consideration by the New Jersey Administration as the state finalizes the draft Energy Master Plan. Please consider AEMA a resource in identifying successful program solutions for deploying DERs across New Jersey. AEMA believes that, with the right policies and transparent price signals, the reliability, efficiency, cost-effectiveness, and emission profile of DERs 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,



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