

Building a Modern Grid

September 24, 2018

New Jersey Energy Master Plan Stakeholder Meetings

Summary Comments of the Enel Group Companies

I. Introduction

The Enel Group appreciates the opportunity to provide comments and recommendations on the New Jersey Energy Master Plan. We commend Governor Murphy and the EMP team for launching this new vision and requesting broad input. This is a remarkable initiative and we are proud to participate. We share these comments for the Building a Modern Grid stakeholder meeting and plan to submit comprehensive comments on the EMP by the deadline of October 12th.

II. Recommendations

The Enel Group respectfully offers the following recommendations to be included in New Jersey's Energy Master Plan:

- The Legislature should pass a Clean Peak Standard as a compliment to the state's Renewable Portfolio Standard. A Clean Peak Standard, such as the one recently passed in Massachusetts, helps to ensure that as renewable penetration grows, an associated amount of energy storage and peak shaving also occurs to smooth the peaks that naturally occur based on the prevalence of solar and wind at specific times of the day. Without a Clean Peak Standard, it may be impossible to achieve New Jersey's goal of 100% clean energy.
- The BPU and Governor's office should make strong financial incentives available to energy storage projects to achieve the state's goal of 600 MW by January 1, 2021. While costs are falling quickly, incentives are important to bring storage quickly to the state.
- The BPU should initiate a docket to develop a framework for Non-Wires Solutions. Nearby states such as New York and the District of Columbia have experience with this process. A key goal of this program will be for all potential distribution upgrades, conduct third-party analysis to assess if a more affordable alternative can exist in the form of Non-Wires Solutions, such as, Distributed Energy Resources, including Demand Response, energy efficiency, energy storage and solar.
- Expand Demand Response in the state by fully implementing AB3723 peak shaving programs. Grid modernization is dependent on customer engagement; Demand

Response is the best tool to engage customers. AB3723 requires the state to launch these programs by mid-2019.

- Maximize distributed resources to support resiliency. Distributed resources make the system more resilient to storms and other extreme weather, as well as, other disruptions. With Hurricane Sandy still fresh in our mind, New Jersey should maximize the extent of DERs, including those that can be used for back-up power (such as energy storage). If every residence in New Jersey had a stormproof battery, just imagine how much easier recovery would have been.
- Consider new rate structures for utilities to incentivize them to promote and serve as an active ally to third-party competitive energy service companies, such as Enel. The utilities are responsible for managing safe distribution systems and should be given the tools to do this effectively. Utilities should be incentivized, not disincentivized, from achieving the Energy Master Plan goals.
- Competition is essential to building a modern grid. Companies like Enel need an opportunity to provide solutions. That is our expertise. In a land constrained and densely populated State, customer side of the meter solutions will be critical to grid modernization. But New Jersey can best do this through competition providing new and innovative cost-effective solutions for customers, not the utility unilaterally developing those for customers. This is key not just for companies that are experts in delivering energy solutions, such as our company, but competition will drive down costs so New Jersey businesses can succeed. These energy customers become more competitive in their own industries by having lower costs, and New Jersey becomes a more competitive state to run businesses.
- Batteries, solar, and other customer-sited clean energy solutions often require extensive interconnection processes to provide electricity to the grid. To truly maximize the benefit of customer-sited batteries used for resiliency, the batteries should also be incentivized to provide services to the local utility (such as peak shaving), and the regional grid (such as frequency regulation) or charging at times when renewables are producing more electricity than the grid needs. We have seen that states with ambitious goals such as New York and even California, get behind on their clean energy goals because interconnection processes for batteries, solar and other customer-sited resources slow the process.
- Support employee training and recruitment/awareness campaigns. New Jersey can become a hub of well-paying jobs in the U.S. Advanced Energy Economy. A recent study found that Texas, of all places, actually has more people employed in the new energy industry, than the oil and gas industry. New Jersey can become a center of this economy in the Northeast.

III. The Enel Group Background

The Enel Group is a global energy company with 72 million customers in more than 30 countries. Enel is a leader in renewable energy and energy services here, with over 1,500 employees in North America. Through companies EnerNOC, Demand Energy, and eMotorWerks (together, to be re-branded “Enel X” on October 1st) and Enel Green Power North America, we operate large utility scale power plants (hydropower, wind, geothermal and solar energy). We also provide a range of solutions for individual customers to use energy smarter including demand response, energy storage, and electric vehicle charging. Overall, we have almost 10,000 MW of capacity and work with thousands of customers in North America. Through EnerNOC, Enel is the largest Demand Response provider to electric customers in New Jersey.

IV. What is Grid Modernization?

“Building a Modern Grid” is the topic for today’s meeting. Overall, the EMP has set out five goals for a sustainable future:

1. Putting New Jersey on a path to achieve 100 percent clean energy by 2050
2. Growing New Jersey’s clean energy economy
3. Ensuring reliability and affordability for all customers
4. Reducing the state’s carbon footprint
5. Advancing new technologies for all New Jersey residents

“Grid modernization” starts with rules and behaviors, not just focusing on the traditional “grid” (wires). Taking a broad view opens up new solutions to long standing challenges. Our company has participated in regulatory proceedings in states across the country and the world on grid modernization and several themes emerge:

- Enabling smart use of electricity through engaging consumers
- Creating competition to drive cost-effective results for customers
- Considering all solutions to a problem, rather than just a pre-determined set of wires solutions
- Aligning environmental goals with the infrastructure planning processes

V. Select Areas for Grid Modernization

Clean Peak Standards

New Jersey should adopt a Clean Peak Standard to drive success to achieving 100% clean energy. Today, 29 states and the District of Columbia have renewable portfolio standards (“RPS”) that require a certain percentage of the state’s electricity to come from renewable energy and track compliance through the use of renewable energy credits (“RECs”). Traditionally, state RPS policies require retail electric providers to supply a minimum

percentage of their retail load (in MWh) from renewable resources. While a traditional MWh approach provides necessary energy, it does not create a market for the necessary, flexible, energy storage capacity and peak shaving activity required to facilitate intermittent renewable generation and to time shift this energy production to the peak period of use. Additionally, as the RPS promotes more intermittent renewable generation to join the market, energy prices will continue to drop, while flexible capacity products will become more important to maintaining the balance between customer demand and market supply. As a result, a “Clean Peak Standard” requires that energy produced at peak time comes from clean resources, rather than high-emitting fossil fuel generating resources.

Energy Storage

New Jersey should implement strong financial incentives immediately for installing energy storage in the state to have the ability to achieve the important goals set forth in the law. Energy storage will be vital to achieving the state’s clean energy goals, in part for the reasons already discussed above. Ambitious growth in renewables, such as the state’s offshore wind procurement, accelerates the need for additional energy storage.

As required in the law, New Jersey is to have 600 MW of storage available by January 1st, 2021. Considering the long lead time at PJM for interconnecting storage, we recommend making incentives, such as rebates or tax incentives, available immediately. Our experience in wholesale markets has found that interconnection can take from one to several years. The next round of planning at PJM occurs in March 2019. Given the long lead time, it is important to have projects in development at that time to achieve the January 1st, 2021 600 MW goal.

Demand Response

New Jersey should implement broad Demand Response programs to help customers take control of energy spend. There are several types of Demand Response, including:

- Emergency/pre-emergency based on preventing and managing emergency operations (such as, PJM);
- Peak shaving, to reduce peaks on system so ultimately customers buy less and put less stress on the distribution system (such as, Pennsylvania Act 129); and
- Non-Wires Solutions to resolve a substation overload when approaching critical conditions at that substation (such as, Brooklyn Queens Demand Management).

“Demand Response” is a facet of grid modernization and opens up alternatives to consuming more electricity, which has a litany of benefits, including driving technological innovation, creates local jobs where energy is used, reduces pollution, and saves customers money.

The regional grid operator, PJM, runs emergency/pre-emergency DR that hundreds of customers in New Jersey participate in. However, New Jersey doesn’t have to, and shouldn’t,

depend on PJM; Jersey can develop its own state-level peak shaving programs that run complementary to PJM.

Peak shaving is a fast and cost-effective way to meet peak electric demand. Pennsylvania, New York and a host of other states have their own programs that save all customers money. How do these work? Peak shaving pays energy users to reduce load at peak times to reduce system peaks, and thereby avoid costs when energy is priciest and avoids building new peaking power plants (often the dirtiest of power plants). Funding for peak shaving, can be developed by using a new or existing small non-bypassable surcharge to customer bills. For instance, the Societal Benefits Charge could be used as a means to collect revenue that can be spent on this program. When compared to the costs, the benefits of these programs are usually much greater.

Non-Wires Solutions

Another element of grid modernization that the state should take the lead on is implementing Non-Wires Solutions. What are “Non-Wires Solutions”? Historically, as energy use increases in a specific place, a bottleneck can occur. There is more needed in one location than the wires have the ability to send because wires are only built to manage so much electricity. Upgrading wires and the substations that serve them can cost hundreds of millions of dollars, if not billions.

Many regions now are adopting the viewpoint that all solutions to bottlenecks in transmission and distribution should be reviewed before new wires are built. Often, it is more affordable to help customers use less energy or use it at better times. The regulatory process to evaluate choices is called, “Non-Wires Solutions”. Brooklyn, for instance, had an overloaded substation problem that would have required \$1B of traditional wires solutions to fix. Instead New York and ConEd decided to obtain a mix of local solar, batteries, demand response and energy efficiency that costs ratepayers 1/5 the price. These programs can be paid for by distribution planning charges similar to existing distribution charges, but can save customers compared to traditional choices.

Non-Wires Solutions are generally defined as any geo-targeted action or strategy that could help to defer or eliminate the need to construct or upgrade a transmission system and distribution substations. Non-Wires Solutions efforts may include, but are not limited to, energy efficiency, demand response, dynamic pricing, distributed generation, energy storage, and volt-VAR optimization.

Benefits to Reducing Regional Grid Costs

The concepts of demand response and Non-Wires Solutions can be implemented at the state level. However, both programs can be used to solve regional grid (wholesale) market costs, as well. First, initiating a robust state-level Demand Response peak shaving program reduces customer costs for their full energy spend, including wholesale and retail charges. Regular peak shaving can avoid the need for new generation and transmission upgrades by impacting the regional peak over time. Another way state peak shaving enables greater reduction in

wholesale costs is that state peak shaving has been effective in increasing participation in PJM's wholesale DR program. Customers participating in one program, participate in the other. New Jersey should explicitly allow customers to participate in both programs.

Finally, there is growing interest in implementing Non-Wires Solutions at the regional level as an alternative to bulk power transmission upgrades. For instance, large arrays of energy storage could be used as a transmission alternative. The batteries could charge and discharge at peak times to balance loads and reduce pressure on transmission bottlenecks. New Jersey could create clarity over transmission investment to detail the process for siting batteries used as transmission alternatives. This has the potential to help solve the transmission bottlenecks in New Jersey that lead to high capacity prices.

VI. Conclusion

The Enel Group appreciates this opportunity to deliver this selection of comments. We look forward to listening to feedback through the EMP stakeholder process and submitting additional details in our written comments by October 12th.