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December 7, 2015

Irene Kim Asbury  
Board Secretary  
NJBPU  
44 South Clinton Avenue  
Trenton, NJ

**Re: Comments on DRAFT UPDATE TO 2011 NJ ENERGY MASTER PLAN**

Dear Ms. Asbury:

The following are our comments on the referenced Draft Update to 2011 NJ Energy Master Plan.

**PAGE COMMENT(S)**

- 6 Since the ERB has not spent any of its \$200 million from HUD since its inception, what new steps are being taken to start realizing the goal of micro grid development using this fund?
- 6 Paragraph 2. With 50% of our “clean emissions statistics” attributed to nuclear, what will happen to the new statistics look like once Oyster Creek is retired in 2019?
- 7 Last paragraph. Same question as on page 6.
- 8 These statistics tell a good story, namely that NJCEP has been working reasonably well. However, it is based on the assumption that the “world is standing still”. This is clearly not the case.

According to the U.S. Energy Information Administration, America’s thirst for electricity continues unabated. This is due largely in part to our unprecedented purchasing of computer related devices (smartphones, tablets, notebooks, X-Boxes, Play Stations, smart TVs, etc.). For example:

For arguments sake let’s suppose that NJ used 50 billion kWh in 2014 but only 40 billion kWh in 2013. While it is comforting to know that we could have used more energy had it not been for the NJCEP program, what are we going to do about the extra 10 billion kWh?

We need to invest in smart technologies that save more than just the typical 10% - 15% in annual energy use. **We need to invest in technologies that are disruptive and can save 15% - 30% in annual energy use. That is where Demonstration Pilots come in. We need to allot significant money in this arena.**

Also, just as important as how much energy the state of NJ saves is WHEN that energy is being saved. The problem in NJ and elsewhere in the nation is that we use energy in “bursts” (especially when the outdoor ambient temperatures are either extremely hot and humid or cold and dry). So while cutting overall kW Demand is admirable, **cutting it at times when the PJM (and local EDCs) is dealing with these “bursts” is even more important.** They typical DR programs as administered by the PJM through

the CSPs are only mildly effective. The typical Peak kW DR is just 10% - 15% and the building occupants are uncomfortable in the process. **There are technologies out there that can drop 30% - 60% of the Peak kW DR during a DR event while at the same time keeping building occupants comfortable. That again is where Demonstration Pilots come in. We need to allot significant money in this arena.**

Finally, the incentives paid by PJM for DR are fairly low as compared to California and NYC so they are insufficient to encourage broad acceptance of ADVANCED DR technologies. Both CA and NYC have taken proactive steps to encourage wide spread implementation of ADVANCED DR technologies by paying incentives for their installation. **This is an easy fix for the NJCEP. These ADVANCED DR installation incentives can be part of the "Custom Measures" program which already pays for BAS. Currently this program only pays for performance based kWh reduction. If it were to be reworded to ALSO pay for performance based Kw Demand Reduction then this critical equipment would see faster deployment and market acceptance which would help NJ and the PJM achieve their goal of a reliable, stable and resilient power grid.**

**The last paragraph on page 18 demonstrates that this is not a problem for the NJBPU: "The State is pursuing strategic measures to advance new CHP, such as leveraging the outreach and funding available through the ERB and other means, including revisions to the NJCEP CHP and fuel cell incentive programs".**

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12 Paragraph 1 states that use of alternative fuel vehicles should be promoted but little is being done to provide for the infrastructure to accommodate these vehicles to avoid "range anxiety". **We have some public/private suggestions that can help provide for this infrastructure.**

14. The section on the proliferation of Solar PV in NJ is impressive. However, if we learned anything from Superstorm Sandy it is that when we lost power, we could not take advantage of most of our Solar PV assets (~1.5 GW). That is sad.

Since most of the Solar PV was installed without battery storage, the ITC was not fully exploited. **Now it is too late for someone who wants to install battery storage for their Solar PV after-the-fact. However, if NJ reshuffles some of their NJCEP budget so as to encourage the installation of these battery storage systems after-the-fact, then not only would NJ citizens have more resilient Solar PV systems but this would prove to be a major "booster shot" to our economy!**

**The last paragraph on page 18 demonstrates that this is not a problem for the NJBPU: "The State is pursuing strategic measures to advance new CHP, such as leveraging the outreach and funding available through the ERB and other means, including revisions to the NJCEP CHP and fuel cell incentive programs".**

15 Under the section entitled, "Promote Cost Effective Conservation and Energy Efficiency" we have not seen any promotion of EE (let alone DR) in State buildings. NJ Citizens pay for the inefficiencies of those buildings so this should be a priority. Not only that but the state would be leading by example.

Actually most of the items in this section have yet to be realized (Only 16 projects implemented thus far).

16 First paragraph, namely, "Support the Development of Innovative Energy Technologies" and third paragraph "Improve Energy Infrastructure Resiliency & Emergency Preparedness and Response".

Again, in order to fully realize the potential of these goals Demonstration Pilots are needed. This can initially be handled via RFPs which could be funded by the ERB and once certain Demonstration Pilots “prove out” then funding can be incorporated into the NJCEP. This will also make up for lost time since the ERB was created.

**PAGE COMMENT(S)**

- 17 We applaud this recommendation at the bottom of the page.
- 18 The last paragraph states, “With the current economic environment, and the low rate of participation in existing incentive programs, the remaining CHP market potential may be insufficient to produce additional new CHP without a more targeted effort. The State is pursuing strategic measures to advance new CHP, such as leveraging the outreach and funding available through the ERB and other means, including revisions to the NJCEP CHP and fuel cell incentive programs.

While we agree with the recommendation in the latter half of that paragraph, there is another way to accomplish this goal. **We strongly suggest that the NJBPU invest in Demonstration Pilots of “Smart Nano or Smart Micro Grids”.** This technology is available and can not only encourage the growth of the CHP and CCHP market in NJ but can also result in “Near Net Zero” and “Net Zero” Energy Cost facilities. Once this technology is proven out it will be a “game changer” that will not only reduce energy consumption and demand but create significant income streams from Frequency Regulation and Advanced DR. The job creation potential (trades people, engineers, architects, management, etc.) which NJ so sorely needs is obvious.

- 33 Paragraph 2 “Goal Status”. We are in agreement that “if you can’t measure it you can’t say you saved it”. However, we believe this particular goal needs to be expanded to include **fully automated Data Analytics and Fault Detection sub metering systems (Each of the ones to go onto an approved list should be thoroughly vetted for accuracy).**

This takes the mundane aspect of having to do manual or spreadsheet based energy savings calculation and the associated errors generated out of the equation (pardon the pun). This commercially available technology would take the energy saving standardized protocols and fully automate them. Remote access to the NEW single market administrator (via URL; username and password) would streamline the M&V process and protect the ratepayers from contractors providing self-serving energy calculations (“The fox guarding the chicken coup”).

- 35 The section “Promote Energy Efficiency and Demand Response in State Buildings” talks about the SEO implementing a number of projects”. When did these RFPs go out? How were they advertised? Will there be more?
- 36 The section “Monitor PJM’s Demand Response Programs”. RTE DR (anticipated by FERC Order 745) is not the only DR program and thus should not be the reason the NJBPU doesn’t incentivize this technology. Currently there is Winter and Summer Capacity DR and Synchronous Reserves DR and the DR technology for these DR programs should in fact be incentivized based on performance regardless whether or not Order 745 is overturned.

**As we all know, in just two (2) years (2018), PJM will be requiring Year Round DR and so that will not only include HVAC but also lighting and Plug Loads. We encourage the NJBPU to invest in Demonstration Pilots to show the viability of ADVANCED DR technology which is available.**

- 38 The third paragraph, “Recommendations” is refreshing. It is clear that the NJBPU has learned from the mistakes of other states that have jumped into so called “smart meters” only to find that the ratepayer gains little if any advantage and what is more, end up paying for a technology that is “not much smarter than ‘dumb’ meters”,

becomes obsolete within three (3) years while they continue to pay 9.75% interest to the EDU over a period of ten (10) years.

Those of us with decades in the energy business have learned several valuable lessons, namely:

- a. So called "smart meters" rarely change the behavior of the end user. People are busy with their core business or other activities and don't want to be bothered with having to have their lives "run by a meter". People want fully automated control that acquiesces to their wishes. There is existing Artificial Intelligent and Prediction technology out in the market that will change client behavior without their becoming unnecessarily involved.
- b. Energy savings (even from Dynamic Pricing and Metering) is more than just dropping energy usage during periods of high price volatility but **also involves having Fully Automated Data Analytics & Fault Detection sub metering systems that record many times more information than so called "smart meters" and alert building owners as to Power Factor, THD, phasing and other issues which adversely affect their power output and efficiency. We can install these systems "behind the meter" with much more significant results.**
- c. As mentioned in the NJBPU recommendation, Smart Grid and DG systems are a much better place to start. In combination with Fully Automated Data Analytics & Fault Detection systems, the end user realizes a "bigger bang for the buck".

**PAGE COMMENT(S)**

- 42 It is true that Advanced Energy Storage (AES) is currently expensive but so was Solar PV back in the 90's and that didn't stop the NJBPU from heavily incentivizing it initially. It turned out to be a good investment and although there were some market corrections along the way (especially when the SREC market "tanked"), Solar PV dropped in price by over 60% and is on its way to approaching grid parity.

That said, AES should be looked at the same way. Especially when one considers the significant benefit from combining it with Solar PV (Especially from a power stability, reliability and resiliency perspective). Therefore, please find a way to give it some serious funding because \$5 - \$6 million is nowhere near enough money. We like the idea of using some of the ERB money to help make this happen.

CA has been seriously committed to funding energy storage and with good results. NJ should do likewise.

- 43 See our comment for page 12

- 44 "Support Emerging Technologies". We have covered this with most of our preceding comments. Therefore, please give consideration to the following funding options:

- a. Use money from the ERB since it is readily available and won't hurt the rate payer.
- b. Generate several RFPs for Fully Automated Novel Demand Response and Enhanced BAS technologies **DEMONSTRATION PILOTS.**
- c. Generate several RFPs for Fully Automated Nano Grid technologies **DEMONSTRATION PILOTS.**
- d. Generate several RFPs for Fully Automated Smart Micro Grid technologies **DEMONSTRATION PILOTS.**
- e. Generate several RFPs for Fully Automated Data Analytics & Fault Detection Systems **DEMONSTRATION PILOTS.**
- f. Generate several RFPs for novel DG (that can, in a fully automated manner, provide peak shaving, participate in all DR programs and provide 100% Business Continuity in the event of a black out (Due to storm, cyberattack, etc.). These would be **DEMONSTRATION PILOTS.**

- g. Revise the wording on the "Custom Measures" and "P4P" programs to incentivize kW DR and not just kwh and therms reduction.
- h. Permit PSE&G to use some of the \$95 million they were approved to spend for EE for "b" – "g" above.
- i. Develop a special program in conjunction with the EDA similar to the CHP funding mechanism.
- j. Since DR is here to stay (even though the market typically only sets an incentive price for 3 years in advance), permit ESIP to take advantage of all DR programs and after the 3<sup>rd</sup> year perform annual "true ups" to incentivize adoption.
- k. The NJDEP should permit use of existing standby generators for Capacity DR as these events occur when there is a TRUE ELECTRICAL DEMAND EMERGENCY. The additional pollution created by this is offset by the fact that New Jersey is the recipient of pollution from these same generators in our neighboring states of NY and PA which permit this practice. Not only that but NJ is receiving much more pollution per Kw from peaker plants in our own state that are operating under those conditions.

As a well know NJ public figure once said, "What good is it for NJ to have a pristine environment if everyone has left to move to a state where they can afford to live".

**PAGE COMMENT(S)**

- 48 Second paragraph under "Goal Status" and
- 49 First paragraph under "Recommendations".

At public forums the EDCs have admitted that they have no way of knowing which of their customers have lost power unless those customers are actually [lucky enough] to reach someone at their call center.

There is absolutely no reason why in this 21<sup>st</sup> century this should be the case. **We have the technology to utilize power quality sub meters (used in Fully Automated Data Analytics & Fault Detection) to immediately bypass a call center and send a signal to the EDC Network Operations Center making them aware of such power outages.**

**The advantages are quite clear. Not only does the call center not get "bogged down" but the EDC can prioritize their "truck roll outs" to more efficiently restore power and advise the clients as to when they will get their power restored.**

This extra benefit of a Data Analytics & Fault Detection system is in addition to helping clients save money on their energy bills (See items 12 and 38 above).

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- 53 We applaud these efforts. The aforementioned DEMONSTRATION PILOTS we recommend will lay the groundwork for all of this.

We would appreciate being given an opportunity to discuss these comments further with the Board.

Respectfully Submitted,

Rey Montalvo  
President

CC: Governor James J. Florio