

October 15, 2018

[Via email to: emp.comments@bpu.nj.gov](mailto:emp.comments@bpu.nj.gov)

Re: New Jersey 2019 Energy Master Plan (EMP)

To Whom it May Concern,

Cascade Energy appreciates this opportunity to provide feedback on the New Jersey 2019 EMP. We are an energy-efficiency engineering consulting firm based in the Pacific Northwest, and have been a leading provider of services to the industrial and agricultural sectors since 1993. Our organization is dispersed across the United States, with ten offices in seven states (California, Idaho, Illinois, New York, Oregon, Washington, and Utah).

Our comments focus on the **Reducing Energy Consumption Stakeholder** portion of the EMP, with our responses following select discussion points outlined on the EMP website:

General:

1. What energy efficiency, peak demand reduction, and demand response programs and systems will assist in helping keep energy affordable for all customer classes, especially as technology advances in areas such as electric vehicles or heating and cooling, which will potentially increase electric energy usage?

New Jersey's Clean Energy Program (CEP) Strategy Plan calls out a potential strategic energy management (SEM) pilot in the commercial and industrial sectors. We strongly support SEM as a strategy for helping businesses manage their energy costs. SEM also builds a foundation for long-term engagement that dovetails with the planned NJ Building and Systems Evaluation (BASE) approach.

We offer two recommendations towards a future SEM pilot:

1. We recommend piloting an SEM cohort focused on the industrial sector rather than the commercial sector (or versus a mixed industrial/commercial SEM cohort). We suggest the cohort contain a range of industrial or industrial-like entities (manufacturers, food processors, and municipal water/wastewater). These facilities vary substantially, but they all manage mission-critical production processes as their core business, employ maintenance staff, and offer good operations and maintenance (O&M) savings opportunities within their complex mechanical systems. One or more cohorts could be formed later for the commercial or institutional sectors with greater subsystem focus on HVAC, lighting, and plug loads, and more extensive focus on employee, tenant, and service contractor engagement.
2. We agree that a pilot is a good approach. What can't be lost is a vision of what to do next upon having a successful pilot. A plan should be in place that lays the groundwork for next steps.

5. What type of educational outreach is needed to advance energy efficiency throughout New Jersey?

Successfully engaging the New Jersey industrial sector requires the BASE program to rely on technical outreach staff to maintain and guide customer engagement. We support the use of dedicated outreach staff as part of this program. In our experience, these projects will not happen in mature demand-side management markets such as New Jersey without dedicated outreach resources in place.

We also advocate that outreach personnel for the industrial sector be sufficiently technically capable to help customers find opportunities right away. Industrial customers are short on time and long on priorities. While they value the incentives that CEP programs provide, what they need first and foremost is to work with someone they trust: trust in their technical abilities and understanding of their industry and trust that they are attuned to their unique challenges and needs. With this approach, outreach personnel become more than gatekeepers to the money; they become strategic advisors to these facilities that influence the decisions they make on energy. We have seen this approach generate comprehensive projects at engaged facilities. These projects go beyond widget-based, measure-by-measure system upgrades, to system-wide upgrades, core process re-engineering, and whole-facility optimization.

Technology:

6. What advances in technology should be considered as part of a strategy to reduce energy consumption? What technologies could complement and advance existing energy efficiency efforts?

We believe the way to build organizational awareness around energy is by regularly reviewing energy performance data. To get people at organizations to think about energy and energy improvements more often, they need to be interfacing with energy more often. An energy management information system (EMIS) is critical to making this happen. An EMIS can help create accountability around energy at an organization and allows leadership to recognize improvements that have been made.

Additionally, in the future, when you consume energy will be as important as how much you consume. An EMIS is a foundational tool for organizations to better understand when they're using energy and to take action to shift energy use as needed.

8. How do we best utilize data analytics for energy efficiency?

Within the industrial sector, in our experience there is minimal value in data analytics as a method of identifying energy-saving opportunities. Analytics can be used to measure improvements and visualize performance trends. In commercial buildings, analytics may also be valuable in identifying opportunities to save energy. Industrial facilities, however, are too complex and require a custom approach that involves interfacing with custom systems and processes. There is an appropriate place for analytics in the industrial sector: we believe it is in reporting and not opportunity

identification. We advocate for top-down regression modeling as the best practice for reporting energy performance in the industrial sector.

State Policy:

10. How can the state play a strong role in reducing its energy consumption?

12. Should the state require energy efficiency in particular projects receiving state incentives?

Our response addresses both questions 10 and 12.

Water and wastewater facilities are some of the largest energy users among public infrastructure. They also tend to be some of the lowest-level participants in energy-efficiency programs for reasons not limited to risk aversion. States can take the lead by requiring that energy is a focus of water and wastewater facilities to secure public funding. We recognize that energy will never be the most important factor in public facilities focused on safe and reliable operation, but it is a key factor.

Some states have implemented requirements that water and wastewater facilities must conduct investment-grade energy audits to secure public funding. While the spirit of these requirements is well-founded—that energy needs to be a consideration when building a new or expanded facility—we have also seen these requirements become overreaching. It is important they be in place, but also to right-size them in consideration of the other regulations that public water and wastewater facilities must accommodate.

Security:

20. How can energy efficiency and peak demand reduction strategies assist in ensuring enhanced energy security, reliability, and resiliency in the energy markets?

The first step toward building energy security, reliability, and resiliency is eliminating waste. As an example, resiliency may involve installing a backup generator at your facility to continue operations in the face of a strain on the grid. Our recommendation is to first eliminate wasted energy through energy-efficiency efforts, and then invest in resiliency sized for the energy demand you actually need (rather than what you actually use and waste).

Economic Growth and Workforce Development:

25. What type of educational outreach is needed to advance energy efficiency in the workplace?

SEM involves creating management practices and a culture around energy in an organization. In doing so, an organization's employees become its greatest assets for saving energy. We see SEM as a path for workforce development opportunities. For example, as we have delivered SEM to rural food processors, we have noted refrigeration operators from diverse backgrounds learn and apply energy efficiency, lead teams, and demonstrate their potential for growth to their employers. We have seen these experiences lead to recognition and promotions. In fact, one of our common frustrations in SEM is losing great energy champions to promotion (to counteract this, our SEM approach extends beyond a single person to include a broader team).

Environmental Justice:

27. What efforts are most successful towards making clean energy and energy efficiency measures affordable and accessible to all?

We see a gap in NJ CEP's current ability to serve small and medium-size industrial customers:

- On one end, the CEP offers a direct install program targeted to smaller commercial and industrial customers. This program consists largely of measures such as lighting and HVAC more oriented to commercial customers (whose energy use may consist 70% of lighting and HVAC). Lighting and HVAC are frequently not the largest energy using systems at small- to medium-industrial sites.
- On the other end, the CEP offers a custom measure incentives program, which does not appear to have any size requirements related to participation. This program has the flexibility to address the typical systems found in both large and small industrial facilities but requires expense and steps that are not cost-effective or appropriately scaled for the magnitude of opportunity found at smaller facilities. We would expect this program to gravitate toward serving larger customers, as they will have more cost-effective projects.

This presents a gap in the market where small and medium industrial customers are underserved. Prescriptive solutions are available to these customers but don't meet their needs. Custom programs are also available but lower savings makes the projects less cost effective. In our experience, there is no correlation between size and complexity at industrial facilities. Our recommendation therefore is a custom program with streamlined requirements appropriate for small customers and small projects.

Please feel free to contact me if I can provide any additional clarification on our response. Thank you again for the opportunity.

Sincerely,



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