

Demand Management Workshop – Maine Climate Council

Meeting Summary

Friday, January 19, 2024
9:00 AM – 1:00 PM

Overview

Three working groups of the Maine Climate Council – Energy, Buildings, and Transportation – jointly hosted a half-day workshop to build understanding of, and identify opportunities and barriers around, electricity demand management.¹ The workshop was part of the groups’ efforts to develop recommended updates to Maine’s climate action plan, *Maine Won’t Wait*.

Participants heard from six national experts about current initiatives across the country, as well as forward-looking visions about what Maine might aim for in the future.

The workshop concluded with participants identifying topic areas for potential policy recommendations in the updated climate action plan. Those topics included:

- Develop a load flexibility plan and rate plan: Can Maine articulate, together with key stakeholders, a set of goals around load flexibility and a pathway for achieving them? Cost, feasibility, and actual savings must be part of the analysis. What steps can unlock investments and create the most net value? How can efficiency be part of this plan as well?
- Review regulatory and market barriers: Can we be clearer on the barriers we face today and opportunities to move towards regulatory and market structures that support the goals?
- Communicate, educate, engage: What recommendations would help educate and engage around these issues and be clear on the goals and the benefits of load management? This engagement should happen with key stakeholders such as the Public Utilities Commission, as well as with consumers to support behavioral changes.
- Focus on communities: As Maine makes progress on these issues, how can we focus on community-level solutions and opportunities, looking for ways to positively impact energy consumers, particularly low-income Mainers.

For next steps, the group agreed to reconvene to translate these topic areas into potential policy updates to *Maine Won’t Wait*. The group emphasized the importance of making the case

¹ Electricity “demand management” is one of several synonyms for the concept of balancing supply and demand in near-real-time on the electric grid primarily by managing demand rather than supply. Synonyms include “load management”, “load flexibility”, and others. Historically, grids have been balanced by managing supply, at substantial financial and environmental cost. Balancing the electric grid by managing demand offers much cheaper and cleaner solutions.

in each of the working groups about the value of pursuing demand management strategies. In addition, the group noted the importance of naming the immediate opportunities – the low-hanging fruit – even as the group articulates long-term aspirations for Maine.

Presentations

The workshop had two expert panels, along with opening presentations. Below is a summary of key points expressed. Slides are available [here](#).² A partial recording of the workshop that begins with the second panel is [here](#).³

Introduction and Grounding

After opening words from Transportation Working Group Co-Chair Joyce Taylor, Energy Working Group Co-Chair Kenneth Colburn framed up the reasons for focusing on demand management, showing how demand peaks are an outsized percentage of system costs. There are thus opportunities to save money and decarbonize more quickly with effective management of demand and supply during the day. His slides are available [here](#).⁴

Buildings Working Group Co-Chair Michael Stoddard spoke to the programs that Efficiency Maine Trust is implementing already. Dean Murphy of the Brattle Group provided an overview of the energy modeling he and colleagues are doing for the Governor’s Energy Office, which shows significant savings in new energy infrastructure under flexible load scenarios. His slides are available [here](#).⁵

Panel 1: What’s happening and delivering value today in the world of demand management?

Three presenters provided insights on this panel.

- Ahmad Faruqui, who formerly led the Brattle Group’s energy practice and is based in California, spoke about the success of programs in several states, often driven by time-of-use rates, as well as the perils of mandatory or badly run programs that don’t create value for consumers. While he didn’t use slides, he did make a summary of his talk in a [Linked-In post](#).⁶
- Jeffrey Quigley, from Virtual Peaker, described the work of the company, which runs 25 programs nationwide that control and manage, based on grid needs, a range of distributed energy resources, such as thermostats, water heaters, batteries, EV

² <https://www.maine.gov/future/meetings/demand-management-workshop-energy-transportation-and-buildings-working-groups>

³ <https://youtu.be/docs38BNOSg>

⁴ https://www.maine.gov/future/sites/maine.gov.future/files/2024-02/2024.01.19_MCC%20Demand%20Management%20Workshop_Colburn%20Slides.pdf

⁵ https://www.maine.gov/future/sites/maine.gov.future/files/2024-02/2024.01.19_MCC%20Demand%20Management%20Workshop_Murphy%20Slides_Pathway%20to%202040.pdf

⁶ <https://www.linkedin.com/feed/update/urn:li:activity:7154186306779017216/>

chargers, and other grid-responsive assets. The company runs a program with Efficiency Maine Trust. He said program success criteria are: (1) high penetration of smart devices, (2) market mechanisms and other ways to have favorable economics, and (3) positive customer experience through excellent communication and right-sized incentives. His slides are [here](#).⁷

- Christ Rauscher, from Sunrun, spoke to the company's work offering "virtual power plant" (VPP) solutions. He described three types of efforts: open access programs for consumers, wholesale markets with grid operators such as ISO-NE, and bi-lateral contracts with utilities. Of the three, wholesale markets have proved the most challenging. Notably, his company sees success with simple market adjacent programs where consumers have the ability to address their own needs. His slides are [here](#).⁸

Panel 2: Looking Ahead – Best practices for implementing demand management; Obstacles and opportunities for Maine

Three presenters provided insights on this panel. View the recording [here](#).⁹

- Jim Lazar, an energy economist and co-founder of the Electricity Brain Trust, spoke to the many benefits of load management, and used the example of a detailed study in the greater Seattle area that looked at the capacity of each circuit. He emphasized the importance of rate design for incentivizing customers to make choices that save them money while simultaneously reducing costs for the whole system. His slides are [here](#).¹⁰
- Lorenzo Kristov, a California-based consultant experienced in energy market design, urged participants to reimagine the entire electricity system, with an eye towards community-based energy systems and planning, distributed resources, and local distribution networks. As a first step, he urged regulatory changes that would allow local generation that is consumed locally to avoid paying bulk grid transmission costs since it does not use the bulk power system at all.
- Doug Hurley, from Ictec Energy Services, described the opportunities to help large energy consumers with onsite power production and battery storage to monitor their power flows and carbon emissions in real time while also participating opportunistically in wholesale energy markets, helping to manage demand peaks and provide resiliency. This capability is here today, as Hurley demonstrated by showing on-screen the real-

⁷ https://www.maine.gov/future/sites/maine.gov.future/files/2024-02/2024.01.19_MCC%20Demand%20Management%20Workshop_Quigley%20Slides.pdf

⁸ https://www.maine.gov/future/sites/maine.gov.future/files/2024-02/2024.01.19%20MCC%20Demand%20Management%20Workshop_Rauscher%20Slides_Fundamentals%20of%20VPPs.pdf

⁹ <https://youtu.be/docs38BNOSg>

¹⁰ https://www.maine.gov/future/sites/maine.gov.future/files/2024-02/2024.01.19%20MCC%20Demand%20Management%20Workshop_Lazar%20Slides_Maine%20Flexible%20Load%202024.pdf

time dashboard of an industrial client, while also noting that participating in these markets is cumbersome with teams of in-house experts needing to hire teams of additional experts. For these types of opportunities to expand, he highlighted the importance of focusing on the interconnection of new resources, the functioning of wholesale markets, and better planning by grid operators and utilities, who generally have been reluctant to embrace these opportunities.

Panelist and participant discussion

Panelists and participants engaged in Q&A and discussion. They explored issues such as, what are some steps Maine can take to accelerate this transition (through policy actions, by allowing local energy transactions to occur without going through the whole sale market, etc.), and how can Maine make this transition equitably (rate structure and discounts can help, having communities and families of all income levels own energy assets, and focus action on the local level, etc.).

The workshop concluded with participants identifying topic areas for potential policy recommendations in the updated climate action plan (summarized in the overview section above).

For additional information, please visit:
<https://www.maine.gov/future/climate/council>