

## **Comments on Efficiency Maine Trust Triennial Plan V**

Efficiency Maine Trust (EMT) Board, Executive Director Michael Stoddard and staff, I would like to support the excellent work as currently reflected in the Triennial Plan V (TPV) but also offer comments suggesting approaches to strengthen the plan to expedite Maine's energy transition and reach our decarbonization goals.

I am Kay Aikin, founder, and Chief Product Officer of Introspective Systems/Dynamic Grid of Portland Maine. We provide grid modernization controls under the brand Dynamic Grid for both utilities and renewable energy developers. You may have seen press on the Isle au Haut microgrid that we helped design/optimize and which Efficiency Maine Trust provided an innovation pilot grant for. EMT has also partnered with Introspective Systems and Pacific Northwest National Lab, and 6 other organizations, including Versant Power and A Climate to Thrive, in an innovative Department of Energy Connected Communities project proposal focused on active dynamic pricing-based demand flexibility.

I am also very heavily involved in the regulatory and grid modernization field locally and nationally, contributing to the Maine Climate Council, the Maine Utility Regulatory Reform and Decarbonization Initiative (MURRDI) convened by the Maine Nature Conservancy and the Great Plains Institute, but most importantly, I am one of 13 board members of the Grid Wise Architecture Council (GWAC) that is the lead Department of Energy-sponsored advisory group for grid modernization across the United States.

There are two main areas that I will focus on where TPV affects our energy transition and can be improved. The first area requires action by EMT, the PUC, and the Legislature, and the second directly focuses on the priorities reflected in TPV.

### **Area 1**

As was detailed in MURRDI, which EMT also participated in during the past year, there is substantial interaction between EMT and its statutory authority, the Public Utilities Commission that oversees EMT's budget, and legislation as it pertains to the operations of utilities. In many ways this, has the consequence of creating silos in how the system works.

One major way that this manifests itself is the split between behind-the-meter (BTM) activities that are largely under EMT's purview and front-of-the-meter (FTM) activities that are more the responsibility of the PUC/utility. This segregation of responsibility is most apparent in Non-Wires Alternative (NWA) situations. The Boothbay Harbor project by Grid Solar was a prime example of merging of BTM and FTM technology opportunities to save ratepayers money and to avoid overbuilding energy infrastructure. We will need more of these type of projects in the future if we are going to decarbonize Maine. That project worked well, and we need more like it.

However, the reality is that other than such pilot efforts, this type of project is hard to coordinate under current process and law. Because of the conflicting responsibilities and purviews, it is hard for developers to combine FTM and BTM grid flexibility into a single project. This makes NWAs much less efficient and hard to make "pencil out". Other than pilot projects like Boothbay or our Connected Communities proposal, NWA's are very hard to accomplish. We need more projects like this. EMT has advocated for legislation in the past that would make its work more effective, and I would hope that EMT can work toward breaking down these silos so that we can combine demand flexibility on the distribution level with FTM grid technologies to integrate more renewable distributed energy (DER).

Related to this would be pro-active engagement by EMT for implementing tariffed on-bill financing for energy improvements and demand flexibility efforts to allow consumers to finance

things like heat pumps, weatherization, efficient appliances, etc.. This would accelerate the integration of not only 100,000 heat pumps but the associated energy efficiency and demand flexibility required to meet our decarbonization goals at least cost. This is directly related to EMT's charter and would make EMT much more effective.

## **Area 2**

I am disappointed with the level of commitment to demand flexibility technology and its ability to manage peak loads with roughly \$300 thousand per year. Peak load and demand flexibility should be a prime strategic priority of EMT. We must move from pilots to full-scale implementation as quickly as possible. I will gladly brief the EMT board on our Connected Communities project proposal, which is an example of a distribution level grid that will see impacts from high penetration of heat pump, EVs, and DER technologies. Currently, the only way to solve problems with congestion and power quality is to increase the size of the wires and transformers. With demand flexibility and dynamic real-time pricing (either as an actual price or as a control signal), we can solve local problems quickly and efficiently.

A reliance by TPV on 20-year-old aggregation technology, Curtailment Service Providers (CSP) and rebates for centralized control of devices only solve general ISO-level problems and are not suited to local distribution problems. Additionally, Innovation pilot projects that frankly have very little money devoted to them and barely move the needle. We must move away from studying and move to doing.

The business model frameworks are being set now and unless we break the existing business as usual paradigm, we will be stuck with systems in 5 to 10 years that do not offer the load flexibility we need when we need it most. Now is the time to set the foundation for what we need in 5 or 10 years. If we just kick the ball down the road for 3 more years with some innovation pilots, the aggregation paradigm will get still further entrenched in the market, and we will not be able to provide the distribution level markets needed to integrate high levels of DER, EVs, and heat pumps. Now is the time to embrace the future.

Overall, all this is not only EMTs responsibility, but EMT does have a pivotal role for promoting, advocating, and helping implement the following:

- 1) A holistic grid planning process aligning short-term utility-led grid planning with long-term strategic planning focused on decarbonizing the grid and managed by the PUC;
- 2) Develop the grid architecture and control technologies that support this strategic plan to decarbonize the grid through beneficial electrification (BE), load flexibility, and distributed energy;
- 3) Promotion of the CTA 2045-A standard connection enabled equipment (might require legislation) This is a common connector for smart load control flexibility, The State of Washington just mandated this type of equipment following Oregon and California will soon mandate;
- 4) Dynamic pricing and new methods in distribution system management that enhance BE, load flexibility, system reliability, and resilience on the distribution grid; and
- 5) Methods to incentivize renewable generation and BE at locations that benefit the grid most in terms of decarbonization. This can be done with new interconnection rules, value metrics, and small tweaks in the NWA law.

These all should be discussed and pursued in the strategic planning for Efficiency Maine Trust,

Sincerely Kay Aikin, CPO Introspective Systems/Dynamic Grid, Portland Maine (207) 245-4797