December 12, 2023 *Submitted electronically*

Michelle Turner, Administrative Secretary
Efficiency Maine Trust
168 Capitol Street, Suite 1
Augusta, ME 04330

Re: Requestion for Information on Efficiency Maine Trust Triennial Plan VI

Dear Ms. Turner,

On behalf of Opower, I am pleased to submit comments in response to the Efficiency Maine Trust (EMT or the Trust) RFI for the Triennial Plan VI. Opower is a part of Oracle's Energy and Water industry, the largest software company in the world with a dedicated focus of building leading edge software for the energy sector. Opower's mission is to create a utility customer experience that invites everyone to save energy and decarbonize. We thank the EMT for the opportunity to respond to the RFI.

Behavioral energy efficiency is accepted as a ratepayer funded efficiency program in 35+ states. Over the last decade, Opower has worked with more than 175 utilities, influencing customers to take energy saving and load shifting actions on an enormous scale. Some noteworthy energy efficiency results include:

- 25% increase in participation in an in-home audit program for a mid-Atlantic utility
- 12% increase in qualified leads for a Northeast home retrofit program
- 13% increase in customers enrolling in a Californian low-income rate program
- 20k additional home audits completed for a West-Coast utility

The following includes responses to EMT's specific questions. Please reach out with any questions or comments as we are happy to provide further assistance as needed.

Sincerely,

Samantha Caputo
Manager, Regulatory Affairs and Market Development
Opower/Oracle
Samantha.Caputo@Oracle.com

EMT Initiatives- What discrete initiatives might we be missing?

The Trust has robust heat pump, home energy savings, low-moderate-income, and electric vehicle initiatives, but is missing a key component that is behavioral energy efficiency (BEE). EMT should incorporate a Home Energy Report (HER) program in Triennial Plan VI. HERs are foundational to BEE. In addition to HERs, BEE encompasses high bill alerts, web engagement, online home energy audits, demand flexibility, and more. Incorporating BEE will balance the program portfolio between initiatives focused on longer-lived measures and short-lived measures; respectively those that reach for deeper savings in the homes of fewer participants and that which can reach nearly every customer while producing massive saving on an aggregate scale. Both are necessary for energy and bill savings and achieving Maine's climate goals.

HERs are a residential behavioral energy efficiency (BEE) program aimed at directly changing how customers consume and manage energy in their homes. HERs may influence simple behaviors like adjusting a thermostat to influencing major actions such as electrifying, weatherizing an existing home, or installing energy efficient devices within a home. HERs drive annual energy savings at scale and can drive participation in other energy efficiency programs.

For 15 years Opower has driven energy savings cumulating to 35.7 TWh, like taking 3.4 million homes off the electric grid for a year. HER programs generate savings over a single year measure life and can achieve significant annual energy savings and avoided climate damages due to the large-scale, opt-out nature of the program. HER programs consistently see savings rates of 1.5 – 2.5% per year, which adds up given the scale of the program. Benefits of HER programs are distributed equitably across utility customers regardless of housing type, homeownership status, geographic location, and income. Due to the opt-out nature of a HER program, it reaches the most customers and motivates ~85 percent of recipients to act. This enables HERs to scale to an entire service area. These savings are significant and have saved customers over two billion dollars on their utility bills across over 175 utilities.

Efficiency Maine offers a wide array of efficiency programs led by a mandate to capture all cost-effective energy efficiency opportunities. Behavior savings come at a fraction of the cost of other energy efficiency measures and should be added to the portfolio. For example, in Massachusetts, during the current 2022-2024 cycle:

- National Grid's HER program is $92.62/MWh of lifetime savings**.**
- National Grid's Residential Coordinated Delivery (RCD, similar to EMT's Home Energy Savings program) is $534.52/MWh of lifetime savings.
- On the gas side behavior lifetime savings are $0.63/therm vs RCD at $1.63/therm.

The program can also be leveraged to drive program particpation in other initiaitves. For instance National Grid is leveraging behavioral energy efficiency to drive weatherization program participation. In the winter of 2021, National Grid was able to triple their weatherization program adoption by leveraging disaggragted heating insights in the HER program.

When considering program implementation there are two options. The Trust can run the HER program through the utilities or leverage data from the utilities to run the program through EMT.

Equity- Please comment on how the Trust may continue to prioritize delivering benefits equitably to low-income and other priority communities while also advancing goals of maximizing energy savings, carbon reductions, and market transformation.

The HER program is one way to deliver benefits equitably to low-income customers while maximizing energy savings and achieving Maine's climate goals. One key benefit of the HER program is LMI customers participate at no cost and see significant energy and bill savings, regardless of homeownership status, income, location, or age. Roughly half the customers in National Grid's HER program are LMI and make up about 37 percent of all HER savings (361 GWh and 20 million therms since 2009). This significant amount of savings from LMI customers equate to

- 305K metric tons for CO2e avoided
- $122M in bill savings

Programs for LMI customers are only useful if customers know about them and participate. EMT should include an online, personalized one-stop-shop that can bring together energy efficiency, energy bill assistance, and other programs for low-income households. A one-stop-shop should provide a curated individualized list of programs/rebates residents are eligible for based on customer attributes. Alongside a one-stop-shop, EMT should utilize proactive communications to customers to drive customers to the online tool. Outbound communications do not mean mass marketing, but rather reaching out to customers on a targeted basis, surfacing personalized insights in the communication to propel customers to act.

Figuring out which customers to target requires EMT, or the utilities, to invest in customer identification. The known numbers of customers who need assistance – those on LIHEAP enrollment lists or missing payments – are only a fraction of those customers who could benefit from access to additional assistance or LMI energy efficiency programs.

There are multiple ways to identify customers. Focusing on underserved communities as defined at the census tract-level has its benefits – it easily identifies and qualifies all households within the census tract as burdened and provides a swift way to target program resources. Relying solely on a census tract approach, however, has drawbacks. Households experiencing energy poverty outside of communities will be overlooked.

To ensure all income eligible customers can participate in programs, we encourage EMT to work with utilities in Maine to identify energy burdened households and not rely solely on census tract approaches to direct program resources. Opower can assign an energy burden score to every household in a utility's territory. Understanding the energy burden at a household level, rather than at a census tract-level, is important to ensure that no households are left out. Time and again, we identified tens of thousands of energy burdened customers, if not more in larger utility territories, that would otherwise have been unseen using a census tract-only approach to identifying customers in need. A multi-pronged approach to customer identification will result in more equitable access to EMT programs.

Electric Vehicle Initiative - Please comment on what additional priorities or strategies the Trust should put in the Plan for transforming the market for electric vehicles?

The benefits of transportation electrification heavily depend on customer behavior. EV purchases and charging can be complex consumer decisions. To ensure Maine residents and businesses benefit from EMT's investment in EV infrastructure and EV ownership incentives, the Trust should include a customer education and engagement component along with any plan to develop an EV charging network or promote EV adoption. Behavior-based strategies can be used to encourage consumers to optimize EV charging, engage in time of use pricing, and maximize the benefits of transportation electrification. Strategies to consider include EV load shifting and providing personalized EV insights to EV owners and can be incorporated into EV owners' HERs to help them better understand their energy use.

Behavioral customer engagement strategies can also improve the utilities' (or EMT's) ability to be a trusted advisor for customers who might consider purchasing an EV. For example, Baltimore Gas and Electric ran an EV adoption campaign to accelerate EV awareness and adoption. This included eight emails over the course of a year targeting single family homes, not on EV rates, and not predicted to be charging EVs at home. This campaign increased customer perceptions of BGE as a trusted advisor and source of information about EVs.

Behavioral solutions can be leveraged to maximize customer performance on time of use (TOU) rates, including EV rates, and provide load shifting benefits for the grid. For example, APS worked with Opower to reduce peak demand and satisfy customers on TOU rates. APS' "TOU Plan Coach" put the insights & recommendations these customers on complex rates need front and center:

- Their peak (3-8pm) and off-peak hours,
- How much they're using on and off peak,
- Demand charge insights for applicable customers,
- And AI-powered recommendations for shifting and staggering their appliance-level use.

APS shifted over 250 MWh off peak in summer 2021 and reduced daily demand by 1.1 MW at the hottest time of day. The experience made customers feel significantly happier with APS, with 13 percent higher overall satisfaction. We would hope an EV-rate focused experience could achieve similar, if not even more pronounced, results.

Appendix – Relevant Reports

Behavioral energy efficiency should be a part of EMT's Triennial Plan VI. There are various examples of modeling and studies completed that examine the potential of behavioral energy efficiency:

International Energy Agency (IEA): An article about the Potential of Behavioral Interventions for Optimizing Energy Use at Home was published in 2021. This examines how behavioral insights can enhance the impact of energy efficiency policy and cites various additional resources, including the IEA World Energy Outlook 2020 that states a "combination of end-use efficiency gains, electrification and behavior change will be required in order to meet the target of net-zero emissions by 2050". IEA considers behavior an essential strategy in achieving decarbonization goals. For instance, IE's Net Zero by 2050 roadmap includes behavior, which was highlighted in an IEA article from October 2021 that states behavior changes accounts for four percent of cumulative emissions reduction in achieving net zero emissions by 2050.

The Brattle Group's Customer Action Pathway Report: this report highlights the role of customer action, including energy efficiency, home electrification, behind-the-meter solar, and electric vehicles, in reducing GHG emissions. This report found that by 2040, actions by utility customers can reduce nearly two times more GHG emissions than would result from current policies to promote investments in clean energy supply alone.

Analysis Group's Role of Behavioral Energy Efficiency in Decarbonization Report compares BEE and structural energy efficiency (SEE) programs and their potential for avoided climate damages. A key finding from this report highlights that BEE and SEE programs should complement each other because BEE achieves significant avoided climate damages at scale each year that the program is implemented, whereas SEE programs achieve great long-term avoided climate impacts, but take longer to scale.

Illume Report- Behavior Programs Come of Age: Analyzing Savings from Recent Home Energy Report Program Studies: ILLUME Advising conducted a meta-analysis of behavioral program performance across the US based on publicly available data. It explored how various factors impact behavioral program performance, including vendor, communication channel, and program maturity. Key findings include that behavior programs continue to generate strong savings that grow over time as customers receive communications.

Washington State Energy Strategy: Washington State included a behavior scenario in its State Energy Strategy Decarbonization Modeling report. The report noted significant potential savings benefits and called for further research into "What types of measures could achieve service demand reductions cost effectively?" and "How fast could these be implemented?" In addition, the draft State Energy Strategy includes the following commentary:

> "The Behavior Change Scenario achieves the greatest drop in demand for energy (32%) with less use of, and therefore need for, energy in transport and buildings. This scenario illustrates the benefits available if policymakers act to encourage driving cars less and using less energy in buildings. As we will see, achieving the levels of electrification required to hit the 2030 emission reduction limit presents several technical and economic challenges. This puts an even finer point on the need to encourage less energy use wherever possible."[1]

[1] The final report illustrates this on page 28. In addition, the data accompanying deep modeling technical report is available here: https://www.commerce.wa.gov/wp-content/uploads/2020/12/Appendix-B.-Data-Accompanying-WA-SES-EER-DDP-Modeling-Report-12-11-2020.xlsx

ACEEE Energy Efficiency Over Time: Measuring and Valuing Lifetime Energy Savings in Policy and Planning: This 2019 report highlights that balanced portfolios should include both long and short-term measures and provides recommendations for program administrators to manage energy efficiency portfolios. Specifically, it states:

> "Short term measures also offer incremental savings that long-term measures alone cannot achieve, because they address different end uses or because they augment physical measures with behavioral changes that support conservation, like home energy reports, or operational changes that ensure the maintenance of savings, like air-conditioning filter replacement."