Tuesday, April 6th, 2021

Michelle Turner, Administrative Secretary
Efficiency Maine Trust
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REQUEST FOR INFORMATION (RFI) ON EFFICIENCY MAINE TRUST TRIENNIAL PLAN V (FISCAL YEARS 2023-2025)

Dear Michelle Turner and Efficiency Maine Board of Trustees,

Founded in 1883, SMRT is a full-service architecture, engineering and planning firm. Its services include interior design, feasibility studies, project management, commissioning, planning, landscape architecture, and mechanical, electrical, structural and fire protection engineering. SMRT undertakes various projects that include laboratories and health care centers, commercial retail complexes, manufacturing facilities, institutional buildings, waste water treatment plants and hotels.

SMRT is committed to being a leader in environmental stewardship and incorporating sustainability into our stanrdar design approach. As such, we have signed on to the AIA 2030 challenge to design carbon neutral buildings by 2030. The ability to adopt energy conservation measures in new construction and major renovations would be aided substantially if Efficiency Maine would consider adopting incentive programs structured in alignment with the typical design process as found in neighboring states. Typically the cost of construction for carbon neutral buildings is 10% higher than code minimum design. This often creates a hurdle for clients to choose high performance design options and still meet their facility program requirements. Expanding financial incentives for energy conservation measures in new construction would provide significant support to accelerate the adoption of sustainable design in Maine.

Sincerely,

Andrew Burke, PE, CEM
Sr. Mechanical Engineer

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Responses to specific questions identified by Efficiency Maine Trust

Trust Question 1

We are currently planning to organize our programs into the following categories: Commercial and Industrial (C&I) Custom; C&I Prescriptive; Small Business Initiative; Distributor Initiatives; Retail Initiatives; Grid Support and Load Management; Home Energy Savings Program; Low Income Initiatives; Electric Vehicle Initiatives; Renewable Resource Fund (Demonstration Program); and Innovation Program.

- What discrete initiatives might we be missing?
    - New construction and major renovation initiatives. The four pathways model adopted by Mass Save is an exemplary approach to incentivizing high-performance buildings of various sizes. You can find more information regarding the Mass Save approach here: https://www.masssave.com/en/saving/business-rebates/new-buildings-and-major-renovations
- What alternative approaches to organizing these programs should we consider?
    - Currently the prescriptive incentives are limited compared to neighboring efficiency programs in states such as Massachusetts and New York. Without a robust prescriptive measure program, Efficiency Maine program participants must use the custom incentive programs. The issue with these programs is that the programs are designed to avoid free-ridership by making an interpretation of the building owner's intent. Most often, the judgement of design intent related to new construction and major renovation in the C&I program is determined by what is represented in the design documents. Once design documents are produced, the contractor (construction manager, general contractor, energy efficiency consultant, or other project stakeholder) is able to offer an energy conservation measure that is an improvement over what is represented in the design documents. This process allows program administrators to clearly distinguish between the owner's original intentions and the energy conservations measure(s) proposed, which prevents the risk of "free-ridership". While this process helps avoid the issue of free-ridership, it does not empower the A&E firm to advise the client on how to make energy efficient choices from the beginning of the project. This approach also results in many hours spent on engineering and producing client deliverable to go to waste as the design will need to be modified to incorporate the energy conservation measure after all the design documents are produced. During a recent screening of energy conservation measures for Efficiency Maine custom incentive program, the program administrator stated that because the design documents already show the energy conservation measure, the issue of free ridership would likely disqualify the measure from participating in the incentive program. At SMRT, we are tying to provide the very best sustainable design services to our clients and leverage energy efficiency incentives to increase adoption of sustainable design by providing financial models showing the return on investment of energy conservation measures. Providing new construction and major renovation incentives that are structured to financially support sustainable design from early design concept phase will lead to better outcomes for C&I projects in Maine.
- What are the most important program aspects that the Plan should maintain and what are Program elements we should consider changing?
    - The C&I custom program requirements are extraordinarily burdensome as written. While

it is understanding to have all these requirements listed when pursuing an incentive worth $1 million it is overwhelmingly onerous to include all these requirements for a smaller incentive request. Based on a review of the C&I program budget and spending levels, it appears that the program has been undersubscribed in recent years. The requirements are reducing participation in the custom programs and my suggestion would be to tier the requirements based on incentive amount pursued.

Trust Question 2

(A) The Innovation Program is designed to analyze and demonstrate cost-effectiveness of emerging measures that have reached (or are about to reach) commercialization, and to gain a better understanding of what strategies should be employed to promote a measure if it were to be added to the list of eligible measures through the Trust's regularly offered programs.

- What emerging technologies, operational or behavioral conservation measures, or grid support/load management strategies should we consider for future Innovation Program pilot projects?
- The suite of remote software data analytic tools that fall under the categories of real time energy management, energy management information systems, energy information systems, fault detection and diagnostics, monitoring based commissioning systems have the ability to dramatically reduce energy consumption and extend the life of facility systems in commercial and industrial facilities. Leveraging existing building automation system infrastructure with cloud-based software and facility maintenance engineering support can have a profound impact on how the built environment is operated and maintained. As building designers strive to create high-performance buildings the requirement for sophisticated equipment increases. The burden to maintain these systems falls on facility engineers who are often understaffed and undertrained to provide adequate routine maintenance. The remote support that engineering and commissioning teams can provide remotely will be critical to ensuring the maximum performance of the systems that will achieve our state carbon reduction goals. Look to NYSERDA Real Time Energy Management (RTEM) Program as a model for introducing this opportunity in Maine. You can find the link here: Real Time Energy Management (RTEM) Program - NYSERDA

(B) Historically, the Trust has set the budget for the Innovation Program at either 0.5% or 1% of program budgets. Please comment on the appropriate budget level for the Innovation Program and, where possible, share examples of budget levels used for equivalent initiatives in other jurisdictions to support your recommendation.

- I think that the innovation in energy efficiency programming is happening in many states outside of Maine with much larger budgets and much larger sample sets of customers to provide adequate data for Maine to assess applicability to Maine customers. I recommend using the Innovation Program to analyze the programs of high performing states and rapidly adopting the best performing programs that are best suited for Maine.

Trust Question 5

To prepare the Plan, the Trust will analyze the economic benefits and costs of electric (and natural gas) efficiency and conservation measures in order to determine the maximum amount of cost-effective savings

potential that could be promoted through the Trust's programs. As prescribed in Chapter 3 and Chapter 4 of the Trust's rules, and further memorialized in the Trust's Technical Reference Manuals (TRMs) and past Triennial Plan filings at the Maine Public Utilities Commission (PUC), the Trust sums the avoided energy costs, marginal avoided transmission and distribution costs, and reduced water/sewer costs to determine the economic benefits of a measure. Please comment on any changes the Trust should make in how it accounts for benefits and costs in its analysis of cost-effectiveness.

- The measure life reference for custom projects is an extreme barrier for envelope measures to pass the benefit cost ratio requirements. Currently the incentive table give new construction envelope measures 20 years of measure life. With the high cost of construction and envelope materials such as upgraded insulation and high-performance windows envelope measure rarely qualify for custom incentives. This is very disappointing because improving the thermal performance of the building envelop can have the most significant impact on building energy consumptions and it also reduces mechanical equipment heating and cooling capacity. The 20-year life for envelope measures seems incongruent with the actual service life of buildings.
- The Efficiency Maine measure life reference table is very general and inadequate compared to the equipment useful life tables of other state programs. The Efficiency Maine table consists of 17-line items, whereas the New York State TRM has an Effective Useful Life "Appendix P" that is 15 pages long and provides source references for each line item.

Trust Question 6

In order to support the increased demand for heat pumps and to promote quality installations, Efficiency Maine developed a training module on "heat pump basics" that is required for all heat pump installers working with Efficiency Maine's residential programs. Efficiency Maine provides other trainings and workshops to contractors working in its commercial programs and is planning to provide building code training to contractors. Please comment on Efficiency Maine's efforts to support workforce development in energy efficiency and include suggestions for additional areas we should consider addressing. What observations can you offer about the capacity or needs of Maine's trade professionals (e.g., electricians, plumbers, weatherization installers, heat pump installers, heating technicians, distributors, retailers, architects, and engineers) to accommodate growing demand from Maine customers for heat pumps, weatherization, high-efficiency heating systems, and other conservation measures offered through the Trust's programs? Please also share any recommendations about the approach the Trust's Plan should take to support workforce training.

- Based on my conversations with Efficiency Maine program administrators, the participation in Efficiency Maine programs from Architecture and Engineering firms is quite low. If Efficiency Maine is going to answer the call to action set forth in the "Maine Won't Wait" Maine Climate Council A Four-Year Plan for Climate Action, there will need to be more outreach to encourage participation from A&E firms. A&E firms are in the best position to ensure that the building stock of the future is as energy efficient as possible. Every building that is built with heating systems using fossil fuels, locks in 30+ more years of carbon emissions, further aggravating the climate crisis. As Maine continues a strategy of adopting more stringent codes, there needs to be financial incentives to provide the continual motivation for project developers to invest in carbon-neutral design strategies.

Trust Question 10

The state of Maine recently released Maine Won't Wait: A Four-Year Plan for Climate Action, which outlines the state's data-driven outcomes to achieve targeted emissions reductions. The plan sets ambitious goals for beneficial electrification and points to the Trust as a key implementer of beneficial electrification through investment in electric vehicles, heat pumps, heat pump water heaters and other technologies. The Trust anticipates there will be a significant funding gap between the funds the Trust is authorized to seek, and the funds required to meet the Climate Action Plan's goals.

- Should the Triennial Plan outline how the Trust would work to meet these goals, pending funding?
    - I think it is important for the Trust to include an outline for achieving the goals of the climate action plan. Energy efficiency programs are tremendously effective at reducing energy consumption and driving adoption of high-performance systems. Customers respond favorably to energy efficiency incentive contributions to their projects.
- How might the Trust fund the adoption of these technologies to contribute to Maine's beneficial electrification goals?
    - The capabilities of real time energy management software are allowing owners, energy managers, and facility operators to access and visualize the electricity consumption of their facilities and in many cases end use devices. The ability to use this data to stage equipment start-up and load shift to reduce demand will be critical for reducing the demand on the grid from

Trust Question 11

In the event that the Trust receives significant revenues from Alternative Compliance Payments through Maine's Renewable Portfolio Standard (RPS), what should be the objective(s) for the use of these revenues and what strategy or approach should be used to achieve those objectives?

- Adopting an incentive program that incentivizes net zero energy buildings, passivehaus buildings, or provides an incentive based on whole building energy use intensity reduction would support the construction of high-performance buildings in Maine.
- Adopting a program that incentivizes building commissioning would be very beneficial to the C&I sector in Maine.
- A C&I program that incentivizes building control systems coupled with monitoring-based commissioning and fault detection diagnostics would result in a significant reduction in utility consumption.