



September 18, 2019

RE: RFI for Beneficial Electrification

The Island Institute is a community development organization located in Rockland, Maine, that works to sustain Maine's island and coastal communities and exchanges ideas and experiences to further sustainability of communities here and elsewhere. Our work is based on our three strategic priorities: strengthening community economies, enhancing education and leadership, and delivering and sharing solutions to common challenges. We work closely with Maine's 15 year-round island communities, as well as many coastal communities.

Energy costs and availability are a significant challenge for many of Maine's island communities. Liquid fuel prices are noticeably higher on islands than the mainland and some islands pay significantly more for electricity than the state average.

When it comes to energy, we are proud that more than 20% of Maine's island homes have been weatherized in the past few years to reduce the incredibly high environmental and financial costs of heating with oil. We are proud that Maine's approach to addressing energy efficiency is being replicated in remote communities around the country.

The Island Institute provides direct support and technical assistance to community leaders grappling with these challenges. We also connect community leaders to each other and to their colleagues in other, similarly situated places so that they can learn from each other and share what is working.

We would be happy to discuss any of the comments made below or further flesh out any of the ideas that are included in this RFI. Please don't hesitate to contact us.

Thank you for all of your good work.

A handwritten signature in blue ink that reads "Nick Battista".

Nick Battista
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Identify barriers to beneficial electrification in the transportation and heating sectors of the State;

In 2018, the Island Institute, in partnership with the Governor’s Energy Office and with advice from Efficiency Maine Trust, produced a report that dives deeply into the specific barriers facing rural communities when it comes to accessing energy efficiency programming. The report identifies the following barriers: geographic isolation, workforce availability, high upfront cost of energy efficiency measures, lower median incomes coupled with higher energy burdens, credit access and debt aversion, lack of access to traditional marketing channels, and lack of awareness or skepticism of existing resources. As noted in the report, these barriers can be overcome through a variety of bridging strategies. Please see the report for more detail on these geographic, financial, and awareness/access barriers that are highly applicable to beneficial electrification of the heating sector. The report can be found here - <http://www.islandinstitute.org/resource/bridging-rural-efficiency-gap-report>

Identify additional information that the trust may require to make additional recommendations or analyses;

Other states with significant rural communities such as Alaska and or remote communities such as Hawaii have engaged in beneficial electrification efforts. The Island Institute has long worked with partners in these states to share information, knowledge, experiences, and resources in support of community scale projects that reduce fossil fuel uses through cost effective, reliable, efficiency and fuel switching measures. For remote communities, incorporating high levels of renewables into a small electrical grid tends to both lower the cost of energy to consumers and offset carbon emissions.

In many ways, the high cost of diesel fuel is already driving some island and remote communities to undertake beneficial electrification efforts. EMT should ensure that existing efforts that meet the definition of beneficial electrification are included in any analyses. Projects done by communities like Vinalhaven, North Haven and Monhegan, and being contemplated by Isle au Haut and Matinicus all meet the definition of beneficial electrification, and provide opportunities for EMT to learn more about beneficial electrification as well as potential barriers and solutions that have already been implemented in the state.

Consider potential roles of utilities in supporting beneficial electrification;

The Island Institute would note that some of Maine’s smallest island communities are not part of CMP or Emera’s territory and these utilities are showing significant leadership on this issue. EMT should celebrate and reward utility leadership on beneficial electrification, even if it is a small utility.

Identify areas or populations in the State less likely to benefit directly from beneficial electrification without additional policy development or utility intervention

As shown in the Bridging the Rural Efficiency Gap report, rural, remote, and island communities are areas of the state which are less likely to benefit directly from beneficial electrification without additional policy development. The Island Institute would strongly encourage EMT to further

consider issues of rural equity and adopt policies that recognize higher energy burden in rural communities.

Populations that are less energy literate may struggle to benefit from this work. Increasing energy literacy in key areas or with key constituencies through education about the tremendous opportunity for fuel substitution by sharing the electricity rate and heating fuel price data that is easy to compare may be very helpful.

Recommend opportunities for beneficial electrification.

The Island Institute has identified four strategic, targeted opportunities for beneficial electrification. One of the underlying themes through each of these opportunities is the importance of tackling the hard problems because that is where there are significant learning and leadership opportunities.

- **Utilize bridging models targeted at Maine’s rural communities to ensure that rural communities are not left behind.**

The Bridging the Rural Efficiency Gap report lays out a combination of policy tools, program design considerations, and community based approaches that can close the rural efficiency gap, connect rural residents with information, financing, and other support needed to benefit from energy efficiency programs. The report included programs that incentive heat pumps in its work and is likely to very applicable to any beneficial electrification programming.

- **Pilot beneficial electrification where the benefits and challenges are likely to be clearer and feedback loops are faster.**

Island communities pay significantly more for liquid heating fuels. This higher cost to the consumer, particularly when coupled with a connection to the mainland grid, means the benefits from beneficial electrification may be magnified. In 2015, 8 of the 15 year round island communities paid roughly the state average prices for electricity while paying significantly more for liquid heating fuels. The price differential on island communities can also substantially change cost-benefit calculations for homeowners and with the utilization of bridging models, may be well positioned to quickly see substantial benefits from beneficial electrification.

When fuel switching for home heating is coupled with solar power, the cost saving benefits of electrification become even more pronounced.

On island communities, the connection between issues is often clearer – for example, the linkage between the energy we use to heat our homes and transportation infrastructure becomes exceedingly clear if weather prevents a ferry from running with a propane truck and people run out of propane. Isolated, willing, island communities may be an excellent place to pilot beneficial work. The reliability benefits of beneficial electrification are easier to see on an island.

Some island communities are already moving in the direction of beneficial electrification and others may be poised to do so. EMT should work with bridging partners to identify a few communities where undertaking a community-appropriate beneficial electrification pilot would demonstrate the benefits and inform further program design.

- **Demonstrate state leadership and smart, long term, decision making when making significant capital investments like purchasing a new ferry.**

The Maine State Ferry Service is slated to procure 2 new ferries in the next few years. These ferries are likely to be in service for at least the next 30 years. Rising fuel and labor costs are driving fare increases, which in turn is causing a decline in ridership. By statute, 50% of the costs of running the ferry, come from the fare box. Purchasing an electric ferry, instead of one powered by fossil fuels is a significant undertaking that will likely require other infrastructure changes but could provide a high-profile demonstration project that highlights Maine's leadership on beneficial electrification while stabilizing the spiraling costs of operating the ferry.

There may be other instances where the state is acting as a market participant and can use this as a way to identify or overcome barriers to implementing beneficial electrification projects that other institutions may face. State leadership is important and if the state is going to meet the emission reduction goals set by the legislature, the state's actions as a market participant must match the rhetoric.

- **Develop targeted industry or sector specific programs that are focused on supporting those natural resource dependent industries that are likely to be significantly impacted by climate change.**

Developing industry specific strategy that is tailored to benefit natural resource dependent industries that are likely going to be impacted by climate change recognizes the importance of supporting the most economically vulnerable industries in ways that help them build long term resilience. In particular, industries like the lobster industry are facing multiple threats from climate change and also currently depend on the availability of diesel fuel to run their boats. Electrification options for marine engines of the size needed in lobster boats are not readily available, nor is it well understood how the infrastructure needed to support electric fishing boat engines fits with operational business models. In addition to fuel prices, the cost of bait is one of the most significant cost drivers for the industry. Bait coolers provide an excellent opportunity for beneficial electrification to reduce operating costs and help ensure the availability of bait.

By paying attention to the needs of the industries likely to be hardest hit by climate change and increasing fuel costs, EMT can help ensure these industries are more resilient to change and are not left behind as other sectors where beneficial electrification may be easier or less complex, move forward.

Appendices

Bridging the Rural Efficiency Gap Report - <http://www.islandinstitute.org/resource/bridging-rural-efficiency-gap-report>