



May 14, 2019

Lisa A. Skumatz, Ph.D.
Skumatz Economic Research Associates (SERA)
762 Eldorado Drive
Superior, CO 80027

RE: R1617 Connecticut Residential Ductless Heat Pump Study, Draft Report

Dear Dr. Skumatz,

Eversource Energy (“Eversource”) is pleased to submit these written comments regarding the draft evaluation report: *R1617 Connecticut Residential Ductless Heat Pumps Market Characterization Study – Draft Final Report* (“Draft Report”), submitted April 9, 2019 by DNV-GL (“Evaluator”). Eversource received the Draft Report on April 23, 2019 with a request to provide comments by May 14, 2019. Per the Energy Efficiency Board Evaluation Road Map Process, these comments are for consideration for inclusion in the Final Report.

This study examined the baseline characteristics of participants in the Connecticut Residential Ductless Heat Pump (DHP) program, using the results of a survey conducted with 90 customer end-users who participated in the program between 2015 and 2016, and interviews with participating HVAC contractors. The study sought to characterize what would have been installed in the absence of the incentivized equipment and to develop a market adoption model. Secondary meter data was used to derive electricity, natural gas and carbon impacts.

Comments on Findings and Recommendations

Eversource appreciates the insight the Draft Report provides into the installation circumstances for program-supported DHPs, the motivations of program participants to install DHPs, and the perspective of participating contractors. Given the evolving market for heat pump technologies and the large diversity of applications for these systems, this insight into the scenarios in which DHPs are installed and the related decision-making processes of customers and contractors is valuable in guiding program planning, design, and future evaluation.

Going forward it will be useful to consider the Draft Report findings in light of any changes to Connecticut policies regarding fuel switching and cost-effectiveness testing resulting from EEB and DEEP deliberations. As the report notes, “a key threshold issue in how to evolve the PSD to better reflect the true impacts of this measure lies in whether the EEB will allow ratepayer funds to support fuel switching moving forward.” In addition, results from the heat pump pilot that DEEP conditionally approved as part of the 2019-2021 Conservation & Load Management plan will provide further information on how heat pumps are used in a variety of installation scenarios to supplement or replace oil and propane-heated systems. The results of this pilot will add to the findings of the Draft Report in determining how best to account for the savings impacts of DHPs.

Eversource offers the following comments on the Draft Report’s recommendations:

Baselines for DHPs. The Draft Report recommends three potential approaches for determining DHP baselines and reflecting them in the PSD: (1) a blended baseline based on the population of projects examined in the study, (2) a set of defined baselines that depend on pre-existing equipment at a site, and/or (3) a custom approach that considers pre-existing equipment as well as customer decision-making on what they may have done in the absence of the program incentive. In addition, the Draft Report recommended that to avoid load-building scenarios, programs might only rebate units where the baseline can be understood as part of an audit, online survey, or analysis of load patterns.

Choosing an approach to baseline determination for DHPs requires balancing cost-effective deployment of DHPs at scale against the precision of customer-specific information that can reasonably and cost-effectively be collected to determine baselines. Given the many possible configurations of pre-existing and alternative heating and cooling systems that might be considered by customers, and the different ways in which the systems could be operated, simplifying assumptions must be made. The vast majority of program-supported DHPs to date have been delivered upstream, via incentives provided to contractors who purchase eligible units from supply houses. Without adding significant barriers to deployment, it is not possible to determine customer-specific baselines for such an upstream approach, so a blended baseline approach may be most appropriate. Outside of the upstream channel, the remainder of program-supported DHPs are installed through HES-IE. For these units there is an opportunity to collect certain customer-specific information, but there are still limitations in the ability of customers and contractors to determine custom baselines using surveys or other evaluation techniques such as those used in this study, and there are costs associated with doing so. In addition, if the responses are linked to eligibility or incentive levels, the collection of this baseline information would be vulnerable to gaming. Therefore, a defined baseline based on pre-existing systems may be most appropriate in these cases.

In addition, the Companies will be assessing performance of the heat pumps (ducted and ductless) deployed under the 100-unit heat pump pilot conditionally approved as part of the 2019-2021 C&LM plan. The plans for the pilot include collecting data on pre-existing systems, types and configurations of new heat pumps, and electric and fossil fuel usage to explore the impacts of heat pumps in a fuel switching scenario. These data may also be brought to bear in defining the appropriate baseline for heat pumps in certain circumstances.

DHP planning tool. Eversource agrees with the Draft Report recommendation to use the DHP Planning Tool to understand the impact of changing incentive levels and alternative fuel prices and help guide program design and implementation. We will utilize the tool when planning for the 2020 update.

Updating DHP hours of use. Eversource agrees with the Draft Report recommendation that a sample of DHPs should be monitored as part of the planned R1982 evaluation of residential HVAC/DHW performance. In addition, as noted above, the heat pump pilot will include data collection and analysis regarding the usage of the heat pumps deployed under the pilot.

Leverage the customer-contractor relationship. Eversource agrees with the Draft Report recommendation to engage contractors and leverage their customer relationships to drive DHP adoption. We will continue building on our existing support for contractor training and certification regarding installation and operation of heat pumps, as well as efforts to educate customers on these systems.

Thank you for the opportunity to provide comments.

Sincerely,

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