



April 7, 2022

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

RE: CT R1965 HP/HPWH Baseline and Market Characterization & R2027 HP/HPWH Reliability

Dear Dr. Skumatz,

Eversource Energy (“Eversource”) is pleased to submit these written comments regarding the draft report for the: *CT R1965 HP/HPWH Baseline and Market Characterization & R2027 HP/HPWH Reliability studies* (“Draft Report”), shared March 25, 2022 by NMR Group (“Evaluator”). Eversource received the Draft Report on March 25, 2022 with a request to provide comments by April 7, 2022. Per the Energy Efficiency Board Evaluation Road Map Process, these comments are for consideration for inclusion in the Final Report.

The Draft Report included results of the baseline and potential assessment for heat pumps (HPs) and heat pump water heaters (HPWHs) in CT, as well as the HP/HPWH reliability assessment. The main objectives of the baseline and market characterization assessment study were to (1) describe the size of the heat pump market, (2) describe market actor roles and perspectives, (3) describe common system configurations and applications, (4) review customer cost-effectiveness by system configuration, and (5) provide recommendations for the Program Savings Document (PSD) and program planning. The main objectives of the

reliability study were to (1) to determine the satisfaction of participants with their heat pumps and heat pump water heaters and (2) assess product reliability.

General Comments on Selected Presentation Findings

Eversource appreciates the Evaluator's efforts to conduct a comprehensive, thorough baseline and potential and reliability assessments of HPs and HPWHs in CT. We value the Evaluator's market characterization, analysis of market trends, cost-effectiveness, satisfaction, and reliability. Eversource anticipates incorporating the new information to be provided in the final reports to implement program improvements.

Comments on Methodology

The Evaluator conducted market sizing, manufacturer interviews, distributor interviews, an install survey, install interviews, and a cost-effectiveness assessment. Eversource finds the study methodology to be appropriate. Eversource does want to note that the HP program went through extensive updates in 2020 and since this study covered 2017-2019, it does not capture the state of the current market and impact of the current program.

Comments and Questions

Eversource has the following comments and questions.

Note that there were increased incentives for HPs in 2020. As a general comment, Eversource would like to note that the incentives for HPs were significantly raised in 2020 and the programs have seen an increase in participation as a result. As this study considered data and surveyed participants from the program years 2017-2019, the results may not accurately reflect current satisfaction and installation counts.

Update acronym for central, ducted heat pumps. Please change the way the Draft Report refers to central, ducted air-source heat pumps. Currently, central, ducted heat pumps are using the acronym "ASHP" (air source heat pump). This is confusing since mini split heat pumps (using the acronym MSHP) are also air source heat pumps. Perhaps use the acronym "CHP" or "CDHP" for central, ducted air-source heat pumps.

Utility bill satisfaction and breakdown of displaced fuel. On page 49, Figure 30 and Figure 31 show one of the areas of least satisfaction was “changes in other utility bills since installing”. If available, please provide any additional information about satisfaction levels among those with backup gas versus backup oil versus backup electric.

Interview/survey questions used to ask contractors about cold climate units. When the Evaluator surveyed the distribution channel/contractors, they used a manufacturer definition for “cold climate” units (for example, the Mitsubishi Hyper Heat units). The Evaluator stated it did not ask the distribution channel/contractors specifically about NEEP specification “cold climate” units but used a generic cold climate term used in manufacturer marketing. Can the Evaluator help us to understand more details on what the specific questions were that were asked and what the responses were? If the Evaluator did not ask the distribution channel/contractors specifically about NEEP specification units, can they describe why not? The NEEP list can include both “cold climate” manufacturer defined units and non-cold climate manufacturer defined units (for example, it includes both Mitsubishi Hyper Heat and non-Hyper Heat units). Does the Evaluator have any thoughts about this and the impact on the answers to the cold climate question?

Percentage of waters heaters in stock that are HPWHs. Are you able to quantify how many of the water heaters being stocked are HPWHs?

Clarify recommendation that the Companies include delivered fuels in baseline scenarios. Currently, the Companies are not allowed to encourage fuel switching (such as using heat pumps to displace fuel usage). The Companies can only use program incentives to incent the customer to increase the efficiency of the equipment selected and after they have decided on the fuel type that best suits their need.

Background for recommendation to work with distributors and retailers to stock HPWHs for same day replacement. The Companies incentivize distributors and retailers to keep HPWH stock available. The issue for emergency replacements is that the contractors tend to only have an electric resistance water heater on hand for emergencies. Should this recommendation be referring to contractors not having HPWHs on hand, or distributors/retailers as it is currently written? If the recommendation is referring to distributors/retailers, where did this finding come from (i.e., distributor interviews, installer survey, etc.)?

Key Findings – Figure 1: Regional Annual MSHP System Sales (2013-2019), HARDI.

Does this data represent all sales (program sales and non-program sales)? CT had energy efficiency funding diverted away from program budgets in the fiscal year 2017-2018, which led to reduced budget allocated to HVAC program.

Key Findings – Figure 4: Primary Heating Fuel Before and After MSHP or ASHP Install (Installers). Why did gas and propane usage percentages increase post installation of heat pumps?

Landscape of the MSHP Market in Connecticut: Figure 16: Average MSHP Cooling Efficiency (SEER) by State, HARDI. Can you provide a similar figure for HSPF?

Landscape of the GSHP Market in Connecticut. Please explain the basis for the comment that any growth in the GSHP market would primarily be in new construction. This does not reflect the incentive changes that were implemented in 2020 or the increase in installations since then. With new GSHP focused entrants such as Dandelion, the majority of the GSHP activity appears to be in the retrofit market.

Please also see suggested minor edits in the Draft Report, via tracked changes.

Thank you for the opportunity to provide comments.

Sincerely,

Megan Errichetti

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