



April 26, 2022

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

RE: CT X1931-5 Commercial Refrigeration Efficiency Update Study

Dear Dr. Skumatz,

Eversource Energy (“Eversource”) is pleased to submit these written comments regarding the draft report for the: *CT X1931-5 PSD Commercial Refrigeration Efficiency Update Study* (“Draft Report”), shared April 12, 2022 by DNV (“Evaluator”). Eversource received the Draft Report on April 12, 2022 with a request to provide comments by April 26, 2022. Per the Energy Efficiency Board Evaluation Road Map Process, these comments are for consideration for inclusion in the Final Report.

The main objective of this study was to produce updated average coefficient of performance (ACOP) efficiency values of commercial refrigeration for use in the Program Savings Document (PSD). The Draft Report presents updated ACOP efficiency values, which represent commercial cooler and refrigeration systems in Connecticut, for application to PSD savings algorithms for C&I refrigerator LED lighting, evaporator fan controls, evaporator fan motor replacement, and door heater controls.

General Comments on Selected Presentation Findings

Eversource appreciates the Evaluator's efforts to update commercial ACOP values for use in the PSD. Eversource anticipates incorporating the new information to be provided in the final reports to implement program improvements.

Comments on Methodology

The Evaluator gathered and processed compressor data from commercial facilities across Massachusetts and Connecticut, aggregated it based on system temperature, and weighted COPs by temperature bins to calculate the ACOP. Additionally, the Evaluator conducted interviews with industry experts on refrigeration to refine the approach at each step. The final data collection involved recruitment of 27 sites (5 with packaged refrigeration systems, 22 with rack systems), of which eight sites (representing 66 rack-only compressors) had data that was used in the analysis. Five of those eight sites with data used in the analysis are facilities located in Massachusetts.

Eversource finds the chosen analysis methodology to be appropriate but does have some reservations concerning the representativeness of the final dataset-- which includes mostly facilities in Massachusetts and only rack systems-- for all relevant C&I refrigeration measures in Connecticut. The Draft Report states that both MA and CT facilities were included as the Evaluator did not think it would materially impact the savings, given both states share similar facilities (such as grocery store chains, which primarily use rack systems) and climate patterns. Eversource notes that evaporator fan controls measures, in particular, are oftentimes installed on packaged systems. Eversource requests some additional justification for sample representativeness for application in CT (in terms of climate patterns, distribution of rack v packaged systems, and estimated ACOPs compared between CT and MA).

Comments and Questions

Eversource has the following additional comments and questions.

Section 3.1- Data collection. This section states that the backbone of the Evaluator's calculation approach was collecting nameplate data for refrigeration systems representative of the systems installed and operating in the state of CT. As noted in the methodology comments section above, Eversource would like to see some additional data to demonstrate the representativeness of using MA facility data for application to the CT PSD.

Section 3.1 also notes that based on utility tracking data, greater than 90% refrigeration load consists of rack systems. All compressors used in this study were part of rack systems and findings indicated that majority of connected refrigeration load in the state of CT comprises rack systems. What year of program tracking data was used to determine that 90% of refrigeration load consists of rack systems? How does the tracking data show the distribution of connected refrigeration load in the state? How do we know that the connected refrigeration load is representative of the distribution of measure installations?

Section 3.1.1- Site interviews. The Draft Report states that the Evaluator recruited 16 site contacts associated with 55 facilities across the states of CT and MA. Table 3-1 shows a table of 27 sites that had enough complete information to be used in the study. What were the reasons the other 28 sites were recruited but not included in Table 3-1?

Thank you for the opportunity to provide comments.

Sincerely,

Jaclyn Rambarran

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