EVERSOURCE

July 28, 2020

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

RE: C1634 ECB Impact Evaluation Draft Report

Dear Dr. Skumatz,

Eversource Energy ("Eversource") is pleased to submit these written

comments regarding the draft evaluation report: *C1634 Energy Conscious Blueprint Impact Evaluation Review Draft* ("Draft Report"), submitted July 7, 2020 by Cadmus ("Evaluator"). Eversource received the Draft Report on July 8, 2020 with a request to provide comments by July 29, 2020. Per the Energy Efficiency Board Evaluation Road Map Process, these comments are for consideration for inclusion in the Final Report.

The Draft Report summarized the Evaluator's assessment of the savings impacts of electric energy, electric demand, and natural gas through the ECB program for the 2017 and 2018 program years. The research activities included tracking database review, project sampling, measurement and verification plan development, site visits including metering and other data collection for projects encompassing 274 distinct measures, and analysis and reporting.

General Comments on Draft Report Findings

Eversource appreciates the evaluator's efforts to conduct a comprehensive, thorough impact evaluation of the ECB program, and we are pleased with the study's key findings regarding the high degree of accuracy of claimed program savings, as demonstrated by gross realization rates of 101.4% for electric savings, 98.6% for seasonal peak summer electric demand savings, 110.6% for seasonal peak winter electric demand savings, and 94.6% for natural gas savings. In addition, the detailed findings by end use and measure type were helpful in understanding the underlying savings drivers and obtaining insights that can be used for program improvements.

Comments on Recommendations

Eversource agrees with some of the Draft Report's recommendations, and has the following feedback on other recommendations:

Recommendation 1 – Remove Dual Enthalpy Economizers. Eversource offers these economizers because they are the best way to economize and they are more likely to be installed correctly than baseline dry bulb technology. Single dry bulbs have to be set up by installers who must estimate when it would be best to economize based on what they think the return air would be—and depending on the accuracy of this estimate, performance can vary substantially. Dual enthalpy economizers make this decision continually, and do not require

installer setpoints. If the evaluated savings were based on a baseline assumption of a *correctly installed* dry bulb, these savings may not reflect the reality of dry bulb installations. In addition, several projects saw reduced economizer savings based on EQUEST modeling. We would like to confirm that the modeling was based on dual or comparative enthalpy and not just single enthalpy. The magnitude of the results appears closer to what single enthalpy would produce.

In general, we do agree that savings appear to be overstated for these measures based on the evaluation, but would request a deemed kWh savings per ton value we could use if we decide to continue offering these measures. For instance, if we remove them from ECB, we would have to consider how to treat them in the other programs that offer them (e.g., EO & SBEA).

Finally, we request information on how the prospective realization rate would change if we were to adopt a lower deemed kWh savings per ton value for economizers, or if we were to stop offering them altogether.

Recommendation 2 – Consider commissioning a lighting study to update hours of use (HOU) by building type. Ultimately evaluation planning and scoping decisions are made by the EEB evaluation committee. However, we do not believe further study is needed, since the recent C1635 EO impact evaluation recommended updating HOU for upstream lighting based a large set of leveraged lighting logger data. Given this recommendation, which we plan to implement, we would also plan to use those values for ECB so there is one set of HOU values for both programs.

Recommendation 3 – Calculate chiller savings using an annual 8,760 hourly spreadsheet calculation method. Eversource engineering staff believe that the recommendation of using a 8,760 hourly spreadsheet would have little to no effect on the accuracy of reported savings. It should be noted that the temperature bin spreadsheet uses 8,760 hours. Also, the major differences between reported and evaluated savings came from the input to the spreadsheet, not the calculations. Engineering will go over the site reports so the verification of input can be modified. In addition, as ERS commented on the PSD review (X1931), they reviewed the chiller savings calculation tool and are making recommendations. We plan to take all recommendations into account before making any significant changes to the calculation methodology.

Recommendation 4 – Implement a post-implementation assessment of air compressor measures by using trend data or power metering post-implementation. We are not sure the added cost and time required for this process would be worth it, considering that there are frequent shift changes and other operational variation over time, and short-term metered load is unlikely to be representative of longer-term usage. In addition, it is unclear what corrective actions would be feasible after getting post-implementation metering results, considering that incentives would already have been paid.

Relatedly, for the air compressor project at site E0001130, the evaluators gave zero evaluated savings for the project because the compressor was not in use at the time of the site visit. The site visit documentation noted that the customer said there were delays in receiving production equipment, but that they would be using the compressor later in the summer. We believe that a

100% reduction in savings is an over-adjustment since the equipment will be used and have considerable savings over its measure life.

Recommendation 5 – Update electric demand savings calculations for air compressors. We generally agree with this recommendation, but a specific update for the engineering spreadsheet would be ideal.

Recommendation 6 –Adopt greater scrutiny into the assessment of load profiles for all chiller measures, including post-implementation metering or trending. We are not sure the added cost and time required for this process would be worth reduced variability in project savings estimates. It would require significant effort and time period of metering, and chillers generally have relatively small amounts of savings due to high baselines. In addition, it is unclear what corrective actions would be feasible after getting post-implementation metering results, considering that incentives would already have been paid.

Recommendation 7 – Include a True New Construction (TNC) designation within the measure tracking database. The tracking data we provided did include designations for true new construction (as well as major renovation, new equipment, and equipment replacement). Specifically, the “Program_Name” field and “Subprogram name” field include designations for program categories including true new construction.

Recommendation 8 – Improve the detail provided in the measure description data entry within the measure tracking database for each measure. We generally agree that detailed measure descriptions are useful in tracking data. However, for custom measures it may be difficult to track and enter consistent descriptions and it would require tracking system modifications. In addition, custom is not one of our reportable measure categories—they are captured under heating/cooling/other measures based on their end-use attributable savings.

Recommendation 9 – Use the results of the baseline study to help prioritize quantitative investigations of standard practice baselines in a future study. We agree with this recommendation, although note that evaluation scoping and planning decisions are ultimately made by the EEB evaluation committee. In addition, it is important to note that the CT energy code is expected to change soon, and we are soon launching an updated new construction program.

Thank you for the opportunity to provide comments.

Sincerely,

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