May 23, 2022

Lisa A. Skumatz, Ph.D.

Skumatz Economic Research Associates (SERA)

762 Eldorado Drive

Superior, CO 80027

RE: C1902B Energy Conscious Blueprint Baseline and Code Compliance Results

Dear Dr. Skumatz,

Eversource Energy (“Eversource”) is pleased to submit these written comments regarding the Review Draft Evaluation Memo: *C1902B Energy Conscious Blueprint Baseline and Code Compliance Results* (“Draft Memo”), submitted May 13, 2022 by DNV, NMR Group, and Brightline Group (“Evaluator”). Eversource received the Draft Memo on May 13, 2022 with a request to provide comments by May 23, 2022. Per the Energy Efficiency Board Evaluation Road Map Process, these comments are in response to the Draft Memo for consideration for inclusion in the Final Report.

The main objectives for this part of the study were to (1) update measure-level baseline values for true new construction and replacement on failure and (2) document current code compliance and gather data to support future evaluation and attribution of savings for code compliance and development efforts.

**General Comments on Draft Memo Findings**

Eversource appreciates the Evaluator’s efforts to establish new construction baselines and evaluate code compliance for the Energy Conscious Blueprint (ECB) Program. We value the Evaluator’s suggestions for updated baselines and anticipate incorporating them into the Program Savings Document (PSD).

**Comments on Methodology**

The Evaluator requested ECB program materials and participant data to review. They utilized Dodge data which they compared to the program data in order to form a comprehensive dataset of non-participants for sampling. The Dodge data also provided the Evaluator access to construction drawings for new buildings, so all of the sites in the sample frame had construction drawings available. The Evaluator also conducted a literature review focused on recently completed new construction baseline and potential studies in neighboring states as well as recent Connecticut studies that had overlap with measure baselines being explored in this study or code compliance. The data collection effort for both the baseline and code compliance components consisted of industry standard practice baseline data collection through review of construction drawings and interviews with market actors and code officials.

Eversource finds the study methodology to be appropriate, though has concerns about the stage of the construction drawings and whether some of the identified non-participants were actually participants of the midstream program.

**Comments and Questions**

Eversource has the following comments and questions.

**In the Summary of Recommendations for Consideration table (Table 2 in the Draft Memo), please add in a column that shows the current 2022 PSD baseline efficiencies and a column that shows baselines in neighboring regions for comparison.**

**Please provide more details regarding the Dodge Data construction drawings.** What types of drawing sets did the Evaluator have access to through the Dodge Data? Were those construction drawings before or after the value engineering process stage? If the team was able to get Dodge Data for 90% construction drawings, that may be a realistic representation of what was being installed. However, construction drawings from earlier in the project are potentially unreliable and would lead to inflated baselines.

**Effort to align heat pump (<65,000 Btu/h) requirements between residential and C&I programs –** Eversource has made an effort to align the requirements for heat pumps in the residential and C&I programs this year. We hope to keep that consistency within the evaluations and maintain the same baselines for heat pumps (<65,000 Btu/h) in both the residential and C&I new construction programs. There is a current evaluation, R1968, that is going to provide new baselines for heat pumps in the residential new construction program. We should check the baseline efficiencies coming from this study against what is being found in the R1968 evaluation.

**Additional comments on split heat pump baseline –** Table 2 in the Draft Memo shows 17.3 EER for the split heat pump baseline which appears to be a typo. It should be 17.3 SEER. Additionally, the suggested 10.2 HSPF seems high compared to what was suggested in the residential section of the PSD. Lastly, why is the SEER baseline for the split heat pump so much higher (at 17.3 SEER) than the unitary split AC unit (at 14 SEER)?

**Please provide a breakdown of baselines by size and instantaneous versus storage for the gas water heaters.** We believe very few instantaneous models are above 95% efficiency and very few storage water heaters are above 95%.

**Clarification around envelope code compliance results from the C19- Commercial & Industrial New Construction Baseline and Code Compliance Study –** On page 11 of the Draft Memo, there are code compliance results from the C19- Commercial & Industrial New Construction Baseline and Code Compliance Study. The envelope code compliance is reported as 99% or 26% with defaults. Please explain the difference. What does the 26% with defaults refer to and which value should be used when comparing to the findings of this study?

**Is the lighting recommendation – to apply an adjustment factor of 40% better than code across the buildings – referring to the 2015 IECC code?** If so, please refer specifically to the 2015 IECC code in the recommendation for clarity. Additionally, the Lighting section (3.2.1 in the Draft Memo) states that, “The overall LPD for the sampled sites was found to be 46% better than code, 32% better than 2021 PSD, and 21% better than 2022 PSD.” Which code is this referring to? Does this statement mean 46% better than IECC 2015, 32% better than IECC 2018 (PSD 2021), and 21% better than IECC 2021 (PSD 2022)? Please clarify.

**Please provide the lighting recommendation relative to the 2021 IECC code.** We will be implementing the new code (2021 IECC) in October of this year, so it would be helpful to have the recommended lighting baseline relative to the 2021 IECC code, rather than the 2015 IECC code.

**Does the lighting recommendation – to apply an adjustment factor of 40% better than code across the buildings – only apply to interior lighting?** The analysis did not consider exterior lighting.

**Please clarify that the baseline updates apply to both new construction and major renovation.** The recommendations section (page 17 in the Draft Memo) states that the baseline updates will be applicable to true new construction projects and not replace on failure projects. It does not mention major renovation projects.

**Is it possible that the non-participants the Evaluator considered in this study participated in the midstream program?** Were the non-participants only checked against the downstream ECB program?

**Would it be possible for the Evaluator to provide the list of non-participants they sampled so Eversource can verify that they were non-participants?**

**Are the boilers (small, medium, larger) listed in Table 9 referring to condensing boilers?**

Thank you for the opportunity to provide comments and questions.

Sincerely,

Megan Errichetti

Megan Errichetti

Analyst, Evaluation | Energy Efficiency | Eversource

megan.errichetti@Eversource.com