

October 10, 2017

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

RE: R1602 Residential New Construction (RNC) Program – Baseline Study

Dear Dr. Skumatz,

Eversource Energy (“Eversource”) is pleased to submit these written comments regarding the draft evaluation report: *1602 Residential New Construction Program – Baseline Study*, Review Draft (“Draft Report”), submitted September 15, 2017 by NMR Group, Inc. (“Evaluator”). Eversource received the Draft Report on September 26, 2017 with a request to provide comments by October 10, 2017. Per the Energy Efficiency Board Evaluation Road Map Process, these comments will be considered for inclusion in the Final Report.

The purpose of the study was to assess: 1) how the single-family new construction market has changed over time; and 2) what changes in building practices have occurred since the previous baseline study conducted in 2011. The study also updated the User Defined Reference Home (UDRH), the baseline used to calculate savings for the Companies’ RNC program. The study included site visits to 70 new, non-program single-family homes in Connecticut that were built under the 2009 International Energy Conservation Code (IECC). Site visits covered all aspects of home energy performance, including building envelope, mechanical systems, lighting, appliances, and air infiltration. Home Energy Rating System (HERS) ratings were performed at all homes. The study also included a billing analysis designed to assess the accuracy of REM/Rate model estimates of energy use.

Eversource appreciates the comprehensiveness of this study and the clear presentation of its results, which will provide key information for updating program savings calculations and adjusting program design. We are pleased with the study’s main finding that program homes outperform non-program homes on every analyzed measure, with program homes having an average HERS score of 48, compared with an average score of 71 for non-program homes. We also note the finding that HERS scores for non-program homes have improved substantially from those in the previous Connecticut baseline study conducted in 2011,¹ with particularly notable improvements in efficient lighting and duct leakage. This finding is consistent with broader trends in adoption of energy efficient measures and building practices, and we plan to adjust program participation requirements, incentive levels, and the UDRH accordingly.

¹ https://www.energizect.com/sites/default/files/ConnecticutNewResidentialConstructionBaseline-10-1-12_0.pdf.

Eversource generally agrees with the findings and recommendations of the Draft Report, and is offering the following technical comments and questions:

- Page I states that the HERS scores improved from 82 (in the previous Connecticut baseline study) to 71 in this baseline study. Was the same version of REM/Rate used in both instances? If not, can NMR provide any insight on how the use of different versions of REM/Rate would impact this finding?
- Table 1-1 on page 2 includes a table note for Tier 4 homes that the program requires a score of 0 before renewables are added to the project. This requirement does not apply to Tier 4 homes, though Tier 4 homes must comply with CT's PV-ready checklist.
- Figure 1-2 on page 11 is very informative. Eversource requests that NMR include a similar color-coded figure that shows HERS scores by heating fuel type (electric, natural gas, propane). Similarly, Eversource requests that NMR include a scatter plot showing HERS score (Y-axis) by home size (X-axis).
- Table 2-18 on p.25 shows that the 2015 MA baseline study found 40 percent of houses having over half of fixtures with high efficacy bulbs compared to 62 percent in the CT baseline study—though the houses in both studies were built in similar timeframes. If the evaluators have any insight on potential reasons for this difference, please provide a brief explanation in the report.
- Table 5.7.1 on page 66 shows glazing area as a percentage of exterior wall area. However, it is not clear if the exterior wall area (denominator) includes the window and door openings or if it is net of window and door openings.
- Table 6-14 on p.80: The numbers of cooling systems in the top row do not add up to 89.

The following comments refer to the billing analysis:

- The electric heating billing analysis for both the non-participant homes and participant homes includes both electrically heated homes and fossil fuel heated homes (tables G-51 through G-54). Eversource requests that the electric heating billing analysis separates the electrically heated homes and fossil fuel heated homes (e.g., by separating the first rows of the tables to show electric homes and fossil homes rather than combined).
- Please provide information on the square footage of program and non-program homes included in the billing analysis, similar to Table 4-2 on p.31.
- Footnote 14 on page 4 notes that data was not provided/available to evaluators to screen against participation in any other Connecticut program, such as an equipment rebate or weatherization program. Please include this note explicitly in the billing analysis section and explain how this issue could impact the comparisons between program and non-program homes—for instance, by not reflecting reductions in non-program homes' consumption that are due to other Connecticut programs.

Eversource appreciates the opportunity to provide comments. Please contact me with any questions you may have.

Sincerely,

Joseph Swift

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