

December 2, 2015

Scott Dimetrosky
Apex Analytics, LLC
1525 Spruce Brook Street, Suite 200
Boulder, CO 80302

RE: Eversource Review of Connecticut LED Lighting Study Report (R154)

Dear Mr. Dimetrosky,

Eversource Energy is pleased to submit these written comments with regard to a draft evaluation report: *Connecticut LED Lighting Study Report* (“Report”), November 16, 2015, NMR Group, Inc. (“Evaluator”). Eversource received the report on November 16, 2015 with a request to provide comments by December 3, 2015.

The Report had the following objectives:

- To provide a basis for reliable estimates of the current use of various bulb types and updated calculations of Connecticut socket and savings lighting potential. These results will be used in combination with inputs from previously conducted Connecticut studies.
- To provide data on baselines and delta watts suitable for the PSD, savings estimates, and program planning.
- To provide data on first-year in-service rates suitable for the PSD, savings estimates, and program planning.
- To provide the customer, equipment, and market data needed to support program targeting and planning needs.

The Report found that saturation of efficient bulbs in Connecticut homes has increased from 45 percent to 56 percent since 2012 driven primarily by LED saturation which has increased from two to ten percent during that time period.

Eversource is pleased with the quality of the Report and its findings. Eversource would like to offer the following constructive comments to the Report to further enhance its value as a tool for program planning:

- The first sentence on page 2 states that the Report had three objectives, but there are four objectives (bullets) listed (see above objectives). Note that the last objective references “equipment” which does not seem to be applicable in this case.
- Eversource requests that key results be presented by income class (low-income versus non-low income) including but not limited to number of sockets and saturation rates (Table 1), purchasing habits (Figure 4), storage behavior (Figure 5), and

potential energy savings (Figure 7). Any relevant findings (differences across these populations) should be discussed and potentially incorporated into the Recommendations and Considerations Section of the Report.

- Eversource believes that home size may be an indicator of the number of sockets, saturation of efficient sockets, and energy savings potential. Eversource requests that the Report include an analysis of these key indicators versus home size. For example, it would be informative to see graphs (and mathematical relationship) plotting number and types (CFLs, LEDs, etc.) of sockets versus home size, savings potential versus home size, etc.
- Consider formatting Figure 8 to highlight overall trend of “efficient” and “non-efficient” bulb.
- The first bullet on page 18 does not seem to correspond to the pie charts on page 20: Nine percent out of 322 LEDs were from direct install programs, and 18 percent out of 494 CFLs were from direct install programs. The correct overall percent seems as if it should be approximately 14.4 percent. Would this change the conclusion on the top page 20 (that the percentage of bulbs obtained through direct-install is higher than expected)?
- Text on page 20 and Table 7 on page 21 states the percentage of HES program participants in Connecticut as 12% annually. Given the figures presented, this percentage should be 1.2% annually. Eversource also administers the HES-IE program, which may have served some of the 30% of on-site participants identifying themselves as low income. However, it is possible this random sample contains a higher-than-average proportion of program participants and therefore, it may be difficult to extrapolate these results to the broader population.
- The contribution of bulbs from the direct install programs appears to be significant (even with the corrected 14.4 percent). Given that these estimates are self-reported, do they seem reasonable based on the Companies’ current direct install program penetration numbers?
- The Report suggests that the self-reported Connecticut results for replaced bulb (e.g. Figure 19) are not as reliable as comparable results from a Massachusetts report where “bulb changes were matched to the previous year’s data and are, therefore, more reliable”. Eversource requests that this Report include a brief description of the Massachusetts report methodology to help clarify and support this statement.
- On page 27, the Report characterizes the stockpiling results as “alarming”. Eversource believes that the authors should refrain from making comments that may appear to be editorial rather than objective. Consider replacing “alarming” with “inconsistent with other findings”.
- Eversource found Section 7, Remaining Potential Energy Savings, to be an invaluable addition to this Report (compared to previous socket saturation studies that did not provide this type of analysis). Eversource would like to conduct some additional analysis

on these findings to guide the Program Savings Documentation (PSD) calculations and future program planning efforts.

- Eversource requests that Evaluator provides the entire calculation table that was used to generate Figure 20, including baseline (existing wattage), and assumed installed wattage. Please do not round the average number of sockets to the nearest integer (one figure after the decimal point is sufficient).
- Besides CFL-Land, and LED-Land, it would be informative to see an “EISA-Land” estimate of potential savings; that is, a lower bound estimate of savings assuming EISA exempt and non-EISA bulbs are left unchanged for the above two scenarios (CFL-Land, and LED-Land).
- Eversource requests that potential savings be broken down by income class (see second bullet above).
- Eversource recommends that relationships of savings potential by home size be included in the Report (see third bullet above).
- Eversource requests that the Evaluator provides all non-confidential data in a spreadsheet format in order to allow for additional data analysis.
- A 2012 DOE study¹ estimated that residential lighting consumption in Connecticut is 1565 kWh and a 2010 EIA study² estimated that residential lighting consumption (nationally) is 1176 kWh. Please provide some insight into possible reasons why these estimates are lower than the Report estimates of 2005 kWh (current) and 3,143 (Incandescent-land).

Eversource appreciates the opportunity to comment on this draft Report. To help ensure efficient and timely completion of a final Report that provides utmost value, Eversource encourages clarifying questions from the Evaluator (via the established evaluation protocols) on these comments.

Very Truly Yours,

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¹ http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/2012_residential-lighting-study.pdf

² <http://www.eia.gov/tools/faqs/faq.cfm?id=99&t=3>