

July 23, 2018

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

RE: C1641 Business and Energy Sustainability Impact Evaluation Draft Report

Dear Dr. Skumatz,

Eversource Energy (“Eversource”) is pleased to submit these written comments regarding the draft evaluation report: *C1641 Impact Evaluation of the Business and Energy Sustainability Program, Review Draft (“Draft Report”)*, submitted July 3, 2018 by ERS, Inc. (“Evaluator”). Eversource received the Draft Report on July 9, 2018 with a request to provide comments by July 23, 2018. Per the Energy Efficiency Board Evaluation Road Map Process, these comments are for consideration for inclusion in the Final Report.

The Business & Energy Sustainability (BES) suite of programs is comprised of the following four commercial and industrial (C&I) programs: the Operations & Maintenance (O&M) program, the Retro-Commissioning (RCx) program, the Process Reengineering for Increased Manufacturing Efficiency (PRIME) program, and the Business Sustainability Challenge (BSC).¹

This study’s primary objectives were to:

- 1) develop electric and natural gas energy savings estimates for BES
- 2) develop program-level electric demand savings coincident with summer and winter on-peak and seasonal peak periods
- 3) provide recommendations to support future iterations of the Connecticut Program Savings Document (PSD)
- 4) estimate the non-energy impacts (NEIs) from the sampled projects
- 5) provide forward-looking realization rates that incorporate the most recent measure-level updates from the 2018 Connecticut PSD.

ERS determined the evaluation results through an engineering assessment of 81 statistically sampled BES projects incentivized in 2015. For every project drawn in the sample, the impact evaluation team conducted site visits to verify measure installations and deploy metering equipment.

¹No savings were claimed through BSC during the evaluation timeframe; therefore, the program was not directly evaluated in this report.

Overall Comments on Findings

Eversource appreciates the Evaluator's thorough analysis of the BES suite of programs, and we generally agree with many of the findings and recommendations. The discrepancy analysis and site-level results included in the Draft Report were particularly helpful in understanding what is driving the savings at these sites, and in targeting areas for improvement. Eversource is pleased that the overall BES results indicate that the programs are realizing the vast majority of their reported energy savings and significant additional demand savings beyond what was claimed. As the report details, the O&M and RCx programs showed generally strong savings results, but the results for PRIME were hampered by lower than anticipated production increases at about half of the sampled projects. (Note that three of the lowest realization projects were at the same site.) These unrealized production increases resulted in 77 percent less savings than expected at these sites, which drove the 46 percent reduction in stated savings for the PRIME program.

The PRIME program encourages energy efficiency through lean manufacturing techniques. Because lean manufacturing improvements are process-oriented, it can be difficult to precisely predict or measure their energy savings impacts. The savings calculation methodology for PRIME uses a benchmark of project savings across a diverse range of manufacturing fields (aerospace, chemical, plastic molding, etc.), business sizes, process types, business maturity levels, and other characteristics. Participating businesses cover a broad range of these characteristics, and there is inherent uncertainty in savings estimates for particular projects depending on the characteristics of the participating business. Furthermore, there are numerous external factors outside the control of Eversource, the PRIME vendor, and the business, such as changes in markets or technologies, which impact production levels and resulting savings. As the report notes, realization rates were strongly affected by "facility- or equipment-specific operation that could not be precisely predicted by vendors a year or more in advance."

Eversource believes that the benefits of the PRIME program outweigh these risks, and that discontinuing the program would deprive customers of an opportunity to identify and improve inefficiencies and waste in their operations. In many cases, PRIME is the first exposure to structured lean manufacturing improvements, especially for smaller to mid-sized manufacturers. The PRIME program helps provide these companies with a new way of thinking about how to manage processes and how to measure results. It also brings an awareness to companies on how they rank among peers and what improvements they may need to be competitive in today's market. This knowledge often leads to repeat PRIME projects at participating companies, and establishes PRIME as a gateway for engaging with other C&I programs. For example, among the twelve companies with PRIME projects sampled in this evaluation, eight have gone on to perform additional energy efficiency work, encompassing over 30 distinct energy efficiency projects. Based on a limited review of the largest PRIME projects in the past 3 years, the participating companies implemented dozens of EO or ECB projects totaling about 7.5 million kWh in annual electric savings and over 95,000 CCF in annual gas savings. In addition, these benefits come at a relatively low cost. Eversource's 2018 budget for PRIME is about \$660,000,

and the utilities' benefit-cost model for 2019 shows that for every dollar spent on the program, it is expected to produce benefits of \$2.30 in avoided energy and other utility system costs. Even after applying the realization rate from this evaluation, it is expected that the program will produce over \$1.20 of benefits for every dollar it costs.

Comments on Recommendations

Eversource offers the following comments on the Draft Report's recommendations.

1. **Application of realization rates.** We plan to incorporate the evaluation's forward-looking realization rates in our 2019 PSD update. This includes applying the 94% realization rate for O&M gas savings based on adjusting the PSD to require the use of the Grashof steam trap algorithm. However, we request that the final report address the extent to which the 54% realization rate for PRIME may have been affected by three projects with a 0% realization rate that were all located at the same site.
2. **Pre- and post-inspections.** We understand that pre- and post-inspection and metering generally improve the accuracy of savings estimates, but this must be balanced with the added cost of these activities. We will review our practices for verifying project savings and identify areas for improvements that will not adversely affect cost-effectiveness.
3. **Equipment replacements and add-ons.** Equipment replacement and add-on measures are rarely installed under BES, except in limited circumstances. For instance, there have been unique cases where RCx data center measures could not be implemented without installing variable frequency drives. In these cases, Eversource has forgone claiming these savings under other programs—which in some cases would have been greater due to longer measure lives in those programs—and installed the measures under RCx to streamline delivery and avoid redundant administrative tasks. For O&M, limited lighting re-tubing was occasionally done under O&M projects during the study period, in cases where tube replacement was considered a standard maintenance activity. Since 2016, standard practice is that lighting measures are no longer installed under O&M.
4. **Training.** BES vendors and program staff provide training for participating facility staff as a standard practice, and will continue to do so. This includes providing project paperwork, such as a "PRIME package" of materials following the PRIME event and, for O&M and RCx, on-site facility staff training and documentation including all contract documents, control drawings, sequence of operations and trend data worksheets to be completed by facility staff at a monthly interval. However, staff turnover at project sites can limit the effectiveness of this training, as new staff may not be made aware of the operational improvements made under the programs.
5. **Demand Savings.** Eversource was pleased to see the demand savings realized by the programs, and will adjust the O&M and RCx realization rates accordingly. For PRIME, the relatively small amount of demand savings may not be worth the effort required to accurately measure and claim this savings, particularly since we do not bid PRIME projects into the ISO-NE Forward Capacity Market.

6. **Documentation.** Eversource has established a new standardized process for PA staff to document and organize project files, and a system for linking certain project files to the records in our tracking system.
7. **PRIME algorithm.** Eversource plans to update the PRIME lean manufacturing algorithm to reflect the results of this study.
8. **Future of the PRIME program.** See comments above.
9. **Steam trap algorithm.** Eversource plans to update the PSD to require the use of the Grashof steam trap algorithm.

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

Sincerely,

Miles Ingram

Miles Ingram
Sr. Analyst, Energy Efficiency, Eversource
Miles.Ingram@Eversource.com
860-665-2441