

## **Impact Evaluation of the Retrocommissioning, Operation & Maintenance, and Business Sustainability Challenge - Key Findings**

This evaluation was conducted to quantify the magnitude and persistence of energy savings from the Retrocommissioning and Operation & Maintenance programs administered by Connecticut Light and Power (“CL&P”) and United Illuminating, and to measure behavioral changes resulting from the Companies’ Business Sustainability Challenge. Evaluators used on-site metering, verified installation of measures, reviewed engineering calculations, and interviewed participants in order to determine program effectiveness.

## **Impact Evaluation of the Retrocommissioning, Operation & Maintenance, and Business Sustainability Challenge - Recommendations and CL&P Responses**

### **Retrocommissioning Program**

Evaluators found that the Retrocommissioning program was successful in identifying and rigorously investigating a wide range of projects. Documentation was sufficient and the savings methodology was consistent and reasonable. Savings varied from tracking estimates for a variety of reasons, including input parameter estimates, interactive calculations, and measures not being implemented as intended.

**Recommendation 1:** The Companies should employ conservative assumptions when claiming savings for projects that require a manual change to set or maintain efficient operation.

**CL&P Response:** In addition to incorporating the results of this evaluation into program design and reporting, which will ensure that adjusted gross savings reconcile to the evaluated savings, CL&P reviews savings assumptions for all projects and will continue to do so in the future. The assumptions used in the Connecticut Program Savings Document reflect lower persistence for these types of measures.

**Recommendation 2:** The Companies should require that the operational conditions before and after an operational change or repair of failed equipment are fully documented, rather than only including a description of the change.

**CL&P Response:** CL&P currently seeks pre and post data for all measures.

**Recommendation 3:** Load factors for motor, chiller, and other equipment should be based on collected data such as instantaneous measurements, short term metering, or BAS/EMS trended data.

**CL&P Response:** Retrocommissioning load factor estimates rely on instantaneous and short-term metering. In the absence of this data, shorter term data collection is used.

**Recommendation 4:** The Companies should calculate measure savings sequentially. For example, the baseline operation and energy consumption for the second measure should be calculated as incremental to the effects of completion of the first measure. Pre

and post demand and energy consumption should be shown for each measure to ease the review process.

**CL&P Response:** CL&P makes every attempt to ensure that savings are calculated correctly, and interactively, as a matter of policy.

### **Operations & Maintenance Program**

The Operations and Maintenance program had a more focused approach, concentrating in a few key areas for savings, and by and large, calculations were reasonable and accurate. Evaluators noted that energy savings from computer power controls varied from the program estimates, and that one compressed air project varied significantly from estimates and the other compressed air measures, which saved slightly more energy than expected.

**Recommendation 5:** The Companies should afford greater scrutiny to the large projects that make up a significant portion of the program portfolio. This can be done by additional levels of review to allow additional people to review the project or increased metering requirements by collecting both pre and post data.

**CL&P Response:** CL&P has implemented tighter processes and now requires metering for these types of projects, working closely with participants to ensure that pre and post data is used in savings calculations.

**Recommendation 6:** Equipment energy specifications should be double-checked, especially for projects where equipment wattages are applied over a large number of installations.

**CL&P Response:** CL&P uses pre-metering, short term and instantaneous metering, and post-metering to test savings assumptions.

**Recommendation 7:** The customers should be required to make leak detection a regularly occurring part of the facility maintenance.

**CL&P Response:** As a sponsor of the Compressed Air Challenge®, CL&P has worked to promote and propagate best practices in compressed air system management, including the establishment of leak detection programs.

**Recommendation 8:** Reinstating the distribution of leak detectors under the O&M Services program should be investigated, along with periodic education or training.

**CL&P Response:** CL&P currently conducts training sessions on leak detection and will investigate increased distribution of leak detectors as part of that effort.

## **Business Sustainability Challenge**

The Business Sustainability Challenge showed a strong emphasis on energy savings, which could be tracked and evaluated through utility billing data. Participants found it very difficult to develop and evaluate meaningful metrics for other dimensions of sustainability, such as recycling, trash, and water savings.

**Recommendation 9:** The Companies should work with customers to develop a staffing plan to ensure sustainability groups or green teams are “official” positions.

**CL&P Response:** As described in the 2013-2015 Plan, CL&P is working to align the Business Sustainability Challenge with other programs, including the Clean Energy Communities program and PRIME.

**Recommendation 10:** Work with customers on a one-on-one basis to develop meaningful metrics.

**CL&P Response:** As detailed in the 2013-2015 Plan, Tracks A and B of the Business Sustainability Challenge have been rolled together into three levels of engagement, which focus on one-to-one interaction and multi-year commitments resulting in sustainability plans and goals.

**Recommendation 11:** While participants are very interested in the broad range of sustainability issues, the program appears to focus on electricity use only in developing savings metrics. To better serve these participants, the Companies should increase focus on non-utility metrics, such as recycling volumes, trash volumes, and water usage.

**CL&P Response:** CL&P will continue to pursue non-utility savings whenever possible. In particular, the PRIME lean manufacturing program contained in the 2013-2015 Plan offers significant non-utility and sustainability benefits to participants.

**Recommendation 12:** The Companies should hold periodic meetings open to all BSC participants, to review successes, challenges, and tools.

**CL&P Response:** In 2011 and 2012, the Connecticut Energy Efficiency Fund sponsored multiple Sustainability Breakfast Forums for Connecticut businesses, providing an open environment for dialogue about energy efficiency and sustainability. Additionally, networking groups for participants and prospects to share best practices, challenges, and ideas have been added as a fundamental part of the program in the 2013-2015 Plan.