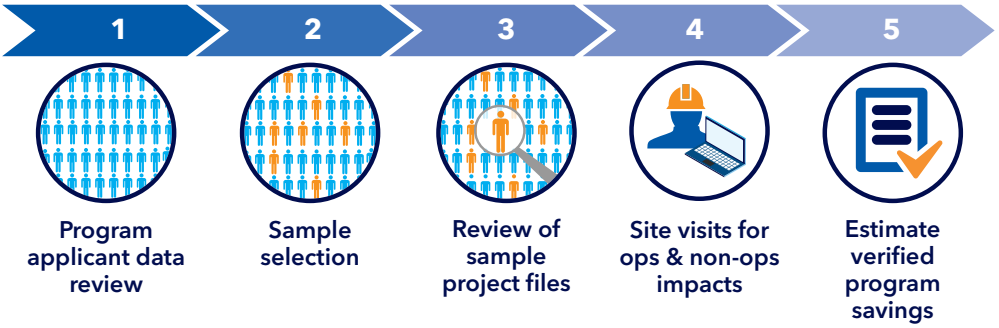
RHODE ISLAND ENERGY C&I CUSTOM ELECTRIC INSTALLATIONS IMPACT EVALUATION - 2020 PROGRAM YEARS

DNV quantified annual electric energy (kWh) savings for custom electric projects completed during the program years (PY) 2020. Those results were then used to calculate a three-year rolling average realization rate using results from PY2018, PY2019, & PY2020.

APPROACH



These projects generally use site-specific customized engineering analysis to generate savings rather than deemed savings estimates. The one major change from last year's study (PY2018/19) is that this year's study calculated savings and realization rates for non-lighting projects only. This study also verified and re-estimated electric energy savings for the sample of projects through site specific inspection, monitoring and analysis. A total of 10 sites were evaluated in PY2020 population. 6 of them were Full M&V sites, 3 were Non-Ops with Onsite Audit and 1 site was Non-Ops with virtual verification.

KEY TERMS

Full M&V evaluated site: A site that included both operational and non-operational impacts and involves onsite measurements using power, time-of-use meters or validated trend data and measure verification.

Non-ops evaluated site: The evaluations do not include any measurement or calculation of any operational characteristics of the installed measures but include verification of technology and quantities through onsite visits.

Virtual visit: Verification of Technology and measure level details by video phone call and photographs. Virtual visit sites are almost always Non-ops sites.

Realization Rate (RR): Ratio between evaluated and tracking savings. If RR = 100%, tracking estimated savings were verified and consistent with onsite findings.

KEY FINDINGS

36M kWh Energy Savings (2018+2019+2020). Three year rolling **realization rate** is **83%** based on the individual results listed below.

PY2018	PY2019	PY2020
RR 78% (n=14) 13M kWh savings	RR 104% (n=15) 13M kWh savings	RR 69% (n=10) 11M kWh savings

RECOMMENDATIONS

- DNV recommends RI Energy to use 83% RR for non-lighting custom program and continue using 95% RR (from previous evaluation) for custom lighting program.
- DNV recommends Rhode Island Energy Implementation team conduct a more rigorous review of engineering calculations for measures involving building management systems or controls measures. Review should include the baselines, control sequences and other relevant assumptions used in the applicant savings calculation. Any trend data and supporting files and post-installation verification documentation like screenshots, photographs etc., should be included in the tracking documentation.

Installed measures

- Lighting
- HVAC
- Refrigeration
- Energy management systems
- Operation & maintenance
- Process equipment
- Compressed air
- and more

- The evaluators recommend the implementation team to collect clear documentation for the basis of the measure event type (retrofit vs new construction) in the project files. The measure event description should note if the measure is a standalone project or part of a larger project, the age of any existing equipment being modified, and the reason that the project is being implemented.
- The evaluator continues to note issues related to proper measure commissioning, or post-installation verification which has been a driver for discrepancies in this study. We recommend that RI Energy ensure proper measure commissioning or post installation inspection protocols are followed to ensure that key measure components are installed and are generating savings.
- DNV recommends RI Energy continue evaluating lifetime savings and reporting them at the site level in all future custom electric evaluations.