Itron Consulting and Analysis: What’s New?

Groundbreaking Energy Efficiency Research and Evaluation Studies

In the last several years, Itron’s Consulting and Analysis group has assisted a number of North America’s state energy regulatory agencies in evaluating energy efficiency and demand response programs involving millions of consumers. Clients include commissions or research agencies in California, Maryland, New York, Texas and Ohio. This work complements Itron’s evaluation and planning services, and smart metering solutions provided to utilities and other program administrators. Our work spans a broad range of expertise, including strategy, policy-driven impact and process analysis, sophisticated statistical sampling, survey development and administration by skilled interviewers, and site visits by a team of investigators and engineers whose measurement and verification techniques exemplify best practices. Below are brief summaries of a selection of these exciting projects.

CALIFORNIA

STATEWIDE CUSTOM IMPACT EVALUATION

Itron has completed an industry-leading impact evaluation of the California IOU’s 2010-2012 Custom Programs for the California Public Utilities Commission (CPUC). The non-prescriptive measures in these Custom Programs are highly diverse, can involve newer and unproven technologies and have widely varying energy savings potentials. Gross energy savings were estimated for over 400 separate projects. An innovative lower rigor analysis added additional sample points to expand findings to segments. The gross impact analysis provided discrepancy factor explanations that led to actionable recommendations for savings estimation best practice methods and procedures. In addition to what is one of the largest gross custom impact evaluations ever, net energy savings and levels of free ridership were also estimated for ~1,400 projects. This level of effort permitted a much deeper, broader and more statistically robust analysis of attribution for custom programs than ever before.

Projects Highlighted

California

• Statewide Custom Impact Evaluation
• Commercial Market Share Tracking Study and Commercial Saturation Survey
• CPUC Measure Cost Study

Maryland

• EM&V Independent Evaluator
• Assessment of Non-energy Benefits from Efficiency Programs

New York

• NYSERDA: Evaluator of Net Energy Savings

Demand Response

• Florida Power & Light: Smart Thermostats
• Southern California Edison: SmartConnect™
• Portland General Electric: Automated DR Program
COMMERCIAL MARKET SHARE TRACKING STUDY AND COMMERCIAL SATURATION SURVEY

On behalf of the CPUC, Itron has recently completed a commercial market study to collect baseline information on the saturation and current purchases of select high priority equipment in California. This study included a Commercial Saturation Survey (CSS) to collect baseline saturation information and a Commercial Market Share Tracking study (CMST) to collect market share and efficiency information on recent purchases of linear fluorescents, televisions and packaged HVAC units. Approximately 8,000 telephone interviews with customers and contractors were executed, as well as over 2,000 on-site surveys.

CPUC MEASURE COST STUDY

Itron designed and completed a large-scale Measure Cost Study for the CPUC to develop estimates of incremental costs for an unprecedented number of energy efficiency measures – over 600 specific deemed measures in total. These cost estimates serve as core inputs into a host of regulatory and program planning activities across the state, including cost-effectiveness analysis, goal-setting and program design. Historically, such measure cost studies have faced a number of significant data collection and analysis challenges, including developing large samples of product prices – particularly for goods typically procured by contractors on behalf of consumers – and untangling price premiums associated with energy efficiency performance from other product features.

For this study, Itron introduced several innovations to address these challenges head-on. One of the key innovations was the use of regression-based modeling as the primary analytic framework for estimating incremental costs. These cost models offer a number of important advantages compared to traditional weighted or simple-averaging methods. First, these cost models can isolate the incremental cost strictly due to energy performance and, more importantly, also quantify the uncertainty of that estimate. Second, these cost models are highly flexible and can be used to produce cost estimates that align directly with specific measures as they evolve and change in California and elsewhere.

MARYLAND

EM&V INDEPENDENT EVALUATOR

On behalf of the Maryland PSC and their utility program partners, Itron has independently verified the energy and demand savings for each of Maryland’s utility energy efficiency and demand response (DR) programs over the last four years and provided an analysis of the cost effectiveness of each program. The Itron team has performed this verification using a due diligence approach that combines in-depth analysis of program tracking data, extensive and ongoing review of the intermediate and final work products of the Statewide Utility Evaluator, and a small amount of field work for a selected subsample of projects to develop estimates of verified program savings. These results are then translated into a cost-effectiveness framework for all of the utilities’ energy efficiency and demand response programs.
ASSESSMENT OF NON-ENERGY BENEFITS FROM EFFICIENCY PROGRAMS

As part of its role as the Independent Evaluator in Maryland, Itron is working to identify the value of non-energy benefits (NEBs) likely to be caused by the current portfolio of Maryland utilities’ energy efficiency programs.

After an initial review of the potential non-energy benefits created by the efficiency programs, Itron has selected five categories of NEBs for explicit quantification in Maryland. These are air emissions; mortgage arrearage reductions; operations and maintenance cost savings; health, safety and comfort; and system reliability.

NEW YORK

NEW YORK STATE ENERGY RESEARCH AND DEVELOPMENT AUTHORITY (NYSERDA): EVALUATOR OF NET ENERGY SAVINGS

Itron serves as the principal investigator responsible for estimation of net energy and peak savings for NYSERDA’s entire program portfolio, working as part of the NYSERDA Impact Evaluation consulting team led by ERS. Itron is currently engaged in the evaluation of net savings for the following program types: low income, multi-family, industrial process efficiency, commercial new construction and retrofit, large commercial and industrial audit, and combined heat and power (CHP). The evaluation plans and data collection/analyses for these programs represent state-of-the-art efforts to quantify net savings, including the intersection of customer spillover effects with potential market effects from programs seeking to change the longer term structure of an energy services market.

DEMAND RESPONSE AND ENERGY EFFICIENCY FOR UTILITIES

FLORIDA POWER & LIGHT (FPL): SMART THERMOSTATS

Itron is assisting FPL to test the performance of residential smart thermostat technology by conducting a pilot study, and is currently performing an analysis of the energy impacts resulting from the installation of the smart thermostats. The smart thermostats employed have the potential for saving energy through the use of programming a schedule of operation on the customer’s HVAC system as well as letting FPL control the HVAC system to better manage the power grid.

SOUTHERN CALIFORNIA EDISON: SMARTCONNECT

Itron evaluated the impacts and process associated with Southern California Edison’s SmartConnect DSM programs, which will involve most of the company’s five million customers. The set of programs includes three DR programs, an In-Home Display program, and three information feedback programs designed to result in energy conservation. This project represents an important opportunity to explore some of the benefits and issues surrounding AMI and integrated DR, energy efficiency, energy conservation and solar power.

PORTLAND GENERAL ELECTRIC: AUTOMATED DR PROGRAM

Itron is currently evaluating PGE’s automated demand response, Energy Partner, program. The Energy Partner program is a short notification large C&I DR program implemented by a third party aggregator. The program operates in both the summer and the winter and PGE is testing the program’s performance under a variety of times and weather conditions. Itron has been contracted to evaluate the program’s impacts and validate the aggregator’s impact calculations. Itron is also performing a program assessment that involves interviewing program implementation staff and participating customers.
ABOUT CONSULTING AND ANALYSIS

Itron’s Consulting and Analysis group offers a wide range of consulting services in the areas of energy efficiency, demand response, renewable energy and distributed generation. These services include program impact and process evaluations, potential studies, market assessments, market and customer research and the evaluation of smart meter enabled programs.