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Evaluation Needs in a Changing Landscape

California Energy Commission Workshop

Carmen Best
Commercial Energy Efficiency Program & Evaluation
July 11, 2016

Overview

- **Utility & Other Program Administrator Energy Efficiency Programs**
- **Energy Savings Evaluation Process and Methods**
  - Why is it important?
  - What changes have been made to improve effectiveness, reduce costs and accelerate results?
- **Opportunities for improvements in evaluation measurement & verification**
  - Legislation & Regulation
  - Accountability
  - Skills and abilities

Current State of Energy Efficiency Programs

- **~$1 billion per year** funding authorization & **~$300 million per year** in Energy Savings Assistance Program funding
- **Funding supports roughly 200 programs**
  - Commercial, industrial, agricultural and residential
  - Technology rebates as well as education, training, marketing and outreach efforts
- **Programs are administered by:**
  - 4 Investor Owned Utilities,
  - 1 Community Choice Aggregator, and
  - 2 Regional Energy Networks;
- **Governed by a "rolling portfolio" oversight structure**
  - 10 years of funding authorization for cost-effective portfolios

Energy Efficiency Programs Address Barriers

- **Portfolios are designed to provide (and evaluated for):**
  - Cost-effective delivery of incremental energy savings
  - Ability to address market barriers to achieve savings
  - Support for transformation in the market toward greater provision of efficiency without programs
- **Energy efficiency interventions and strategies evolve:**
  - Efficiency improves through code with new construction and major renovations for existing buildings
  - Efficient technologies become the normalized as efficiency continues to improve through standards and technological advances
  - Behaviors, attitudes, costs, and regulations all affect adoption
  - Different approaches are needed to target different barriers

CPUC Has Managed Portfolio Evaluations Since 2006

- The gap between reported savings and evaluated savings has narrowed from a 60% to 20% difference
- Targeting uncertainties in field evaluations improved efficiency and increased coverage of the field based review
- Expanded public processes and reviewed 75% of the kWh savings claims through field verification despite a budget reduction of 50%
- Energy efficiency evaluation results are a known and fundamental input for: portfolio planning, goals and potential updates, and the CEC demand forecast
- Currently considering a shift towards “program-embedded” EM&V through improved data collection, meter based analysis and performance-oriented program designs

Evaluation measurement & verification continues to be important because we need to…

- **Accurately and consistently** measure savings achieved to determine avoided cost to rate payers and dollar savings for participants
- Know **what is working** now and what may work next to **over come market barriers** to improved efficiency
- Maintain **accountability for <u>incremental</u> efficiency** gains and "push the market" not just ride along with it
- Use results from evaluation measurement and verification to **continue to adapt to the market** by identifying new potential, and tackling it with effective policies and program designs

New legislation & regulatory proceedings affect the emphasis on various measurement methods…

- Integrated Resource Planning, Distribution Resources Plan (DRP), Integrated Distributed Energy Resources (IDER) are active proceedings at the CPUC
- Senate Bill 350 – Doubling Energy Efficiency
  - Redefined energy savings as “taking into consideration normalized metered **consumption**” (not efficiency)

Benchmarking –

inventory of building stock for on going improvements over time

Baseline –

incentives for existing buildings to bring them into conformity with, or exceed code; and adjust goals

Assembly Bill 802

Behavior, RCx & Operations -

Allows activities reasonably expected to produce multiyear savings.

Overall reduction in **Normalized Metered Energy Consumption** shall be considered as a measure of savings

An integrated resource planning future creates important opportunities for measurement to adapt…

- **Embed (E)M&V in programs or other deployment strategies**
  - Capture and demonstrate the value of the energy efficiency intervention
  - Create value through M&V for implementers to sell efficiency and build confidence gain financing
  - Cut costs through automation and upfront data collection and feedback
- **Continue to create a common understanding of performance**
  - Agree up front to measurement & measure from different perspectives
  - Allow for delayed savings claims or settlement to see what materializes in the data and use it to improve future estimates
- **Shift accountability for measured performance**
  - Evaluation is a tool for regulators AND implementers
  - Accountability structures need to be aligned along the chain to support performance and make savings real
- **Build capacity through training, skills, or partnerships to deploy energy efficiency with measurement**