| **DOCKETED** |
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<td>Raquel Kravitz</td>
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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
  o Commercial, industrial, agricultural and residential
  o Technology rebates as well as education, training, marketing and outreach efforts

• Programs are administered by:
  o 4 Investor Owned Utilities,
  o 1 Community Choice Aggregator, and
  o 2 Regional Energy Networks;

• Governed by a “rolling portfolio” oversight structure
  o 10 years of funding authorization for cost-effective portfolios
Energy Efficiency Programs Address Barriers

• Portfolios are designed to provide (and evaluated for):
  o Cost-effective delivery of incremental energy savings
  o Ability to address market barriers to achieve savings
  o Support for transformation in the market toward greater provision of efficiency without programs

• Energy efficiency interventions and strategies evolve:
  o Efficiency improves through code with new construction and major renovations for existing buildings
  o Efficient technologies become the normalized as efficiency continues to improve through standards and technological advances
  o Behaviors, attitudes, costs, and regulations all affect adoption
  o 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 **overcome market barriers** to improved efficiency

• **Maintain accountability for incremental 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)

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<td>inventory of building stock for ongoing improvements over time</td>
<td>incentives for existing buildings to bring them into conformity with, or exceed code; and adjust goals</td>
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**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 and 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**