California Energy Commission

Evaluation, Measurement and Verification (EM&V) for Energy Efficiency in Publicly Owned Utilities

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Kae Lewis
Demand Analysis Office
Electricity Supply Analysis Division
Klewis@energy.state.ca.us / 916-654-4176

California Publicly Owned Utilities (POUs)

- 40 locally owned electric utilities
- (2008) IOU vs. POU savings: 92% vs. 8%
- Heterogeneous – sales range from 100 MWh to 288,000 MWh; customer mix differs
- LADWP and SMUD are largest; contribute over 65% of savings
- Fifteen largest POUs contribute 97% of savings

CEC's Mandate in POU EM&V

- SB 1037 (2005) and AB 2021 (2006) emphasized increased energy efficiency in 40 publicly owned utilities
- **POUs report**
  - Efficiency program expenditures, savings and cost-effectiveness
  - Independent evaluation of efficiency programs
- **CEC responsible for**
  - Monitoring POUs' annual efficiency progress
  - Reviewing POU independent evaluation studies, reporting results, and, if necessary, recommending improvements
  - Insuring that savings verification increases the reliability of savings and contributes to better program design
  - Our focus is savings impacts, not program process, studies

POU Evaluation Progress and Plans

- Since 2008, nearly half of POUs have completed EM&V impact studies for efficiency programs
- Additional studies are in progress (2010) mainly for the southern California utilities
- Existing studies have indicated high savings realization rates (claimed/verified savings)
- Energy Commission performed in-depth review of all POU existing evaluation reports in 2010 and discovered shortcomings in methods
- CEC developed *EM&V criteria framework* for future impact studies and will provide training services beginning in 2010

Draft POU EM&V Criteria Framework

- CEC's criteria for an acceptable EM&V impact study is based on international and CPUC evaluation protocols for energy efficiency programs.
- Framework criteria provides for:
  - Complete and consistent reporting of programs
  - Documentation of all assumptions, sources and algorithms
  - Calculation of gross savings using standard methods of sampling and savings estimation
  - Thorough explanation for differences between claimed (ex ante) and verified (ex post) savings impacts
  - Clear conclusions and recommendations on savings reliability, and, if necessary, program improvements

Challenges to Efficiency Program Evaluation in POUs

- Funds allocated for EM&V work may be too limited for comprehensive review
- POU staff are new to EM&V and have other efficiency and utility responsibilities
- Although the CPUC protocols may be ideal, in some respects, they may not be practical for smaller utilities; CEC staff has to learn more about POU EM&V situation to provide guidance
- ARRA funded energy efficiency projects will exist in both cities and POU special districts