



CALIFORNIA ENERGY COMMISSION

MEASUREMENT, VERIFICATION, EVALUATION AND REPORTING OF ARRA PROGRAMS

Monica Rudman
Special Projects Office
Fuels and Transportation Division

IEPR Workshop
Sacramento, CA
June 14, 2010

DOCKET	
10-IEP-1B	
DATE	<u>JUN 14 2010</u>
RECD.	<u>JUN 15 2010</u>



The Energy Commission is responsible for four American Recovery and Reinvestment Act of 2009 (ARRA) funded programs totaling \$314.3 million.



ARRA Program and Budgets

Program	Sub Program	Budget (million)
State Energy Program (SEP)	Energy Efficient State Property Revolving Loan Program	\$25
	Low Interest Energy Efficiency Financing Program	\$25
	Municipal Financing Program	\$110
	Comprehensive Residential Building Retrofit Program	
	Municipal and Commercial Building Targeted Retrofit Program	
	Clean Energy Business Finance Program	\$30.6
	Green Jobs Workforce Training Program	\$20
Energy Efficiency Conservation Block Grant (EECBG)	Small City and County Direct Grants	\$33.3
	Discretionary Funds	\$12.9
State Energy Efficient Appliance Rebate Program		\$35.2
Enhanced Energy Assurance and Smart Grid Program		\$3.6



Why Evaluate Programs?

The Federal Government and California's administrative and legislative branches, have made it very clear that the ARRA programs will be the subject of intense scrutiny.



Measuring, Verifying and Evaluating Energy Efficiency Programs is the Professional Standard in California

For decades, the State of California has directed evaluations of investor-owned utilities' energy efficiency programs.

Policymakers put energy efficiency first in the “loading order” of resources which justified extensive Measurement, Verification and Evaluation (MV&E).

The Energy Commission has evaluated and documented the impacts of many programs, including the Peak Load Reduction programs of 2001.



We Want to Tell the Story

What benefits did we provide to California? At what cost?

What worked and what didn't?

Why did some approaches work better than others?

How did efficiency technologies developed through the PIER program perform in practice?

What information is applicable when developing future building and appliance standards?



Specific Objectives

- Ensure proper use of program funds
- Confirm progress towards program implementation milestones
- Verify installation of appropriate end-use technologies
- Verify the accuracy of reported energy savings
- Assess programs' cost-effectiveness
- Determine energy savings/generation and peak demand reductions
- Estimate climate change impacts (carbon emissions)
- Evaluate market-transformation impacts (For SEP –funded programs)
- Assess job impacts



Energy Commission's Multifaceted Approach to MV&E

- Technical staff carefully scrutinize funding recipients' projects and proposals prior to making any awards and work with applicants to develop the "best projects"
- Funding recipients are required to participate in MV&E activities
- Contract with an independent evaluator
- Coordination with ARRA Support contract



Obligations Common to All Funding Recipients

- Comply with federal reporting requirements
- Allow access to facilities and records
- Provide data needed to measure and verify electricity and fuel reductions
- Provide associated data as necessary to establish baseline energy and/or fuel use



MV&E Considerations Included in SEP Project Selection Criteria

Potential funding recipients were evaluated on:

- Their planned approach to collect and organize the required MV&E data from all retrofit program participants
- Proposed program activities that verify the actual energy savings and demand reductions due to the retrofits
- Their strategies to encourage retrofit participants to cooperate with ARRA SEP Program evaluations



MV&E Request for Qualifications (RFQ)

- Purpose was to select a team of engineers to assess the impacts of the Energy Commission's ARRA-funded programs
- Up to \$4.1 million budgeted (\$200k ERPA funds and \$3.9 million ARRA)



Solicitation Process

- RFQ released on December 7, 2009
- Statement of Qualifications (SOQs) were due on January 12, 2010
- Five teams submitted SOQs



A Scoring Committee Ranked Teams

Factors included:

- Approach to the tasks in the work statement
- Qualifications
- Examples of prior work
- References
- Discussions



The Scoring Committee Considerations

- Level of understanding of the work statement and goals
- Ability to carry out tasks
- Experience in all aspects of the effort
- Ability to offer economic benefits to California through as local office



Highest Ranking Team: KEMA, Inc.

Subcontractors to KEMA, Inc. include:

- Itron
- kW Engineering
- Global Energy Partners
- Katin Engineering Consulting (DVBE)
- Robert Thomas Brown Company (DVBE)
- Engage (DVBE)
- SBW Consulting
- ERS
- Michaels Engineering



The KEMA, Inc. Team is Experienced and Qualified

Team members were responsible for designing and implementing the vast majority of the 2006-2008 IOU energy efficiency program impact evaluations on behalf of the California Public Utilities Commission.

The measures evaluated through studies conducted by the KEMA team accounted for nearly 75% of IOU portfolio claims.



California-based Team

- Team will be working out of offices located throughout California and the western United States
- KEMA estimates that 80-86% of the contract will be allocated to California resources



Contract Tasks

Task 1: Develop an Action Plan for using engineering expertise to monitor and verify ARRA program activities and products (approximately 5% of work effort)

Task 2: Implementation of the monitoring and verification plan (approximately 40% of work effort)

Task 3: Develop an Action Plan for engineering efforts to evaluate energy, peak demand, and other impacts of ARRA program activities (approximately 5% of work effort)

Task 4. Evaluation Action Plan implementation (approximately 35% of work effort)

Task 5. Annual and final reporting (approximately 5% of work effort)

Task 6. Administrative support services to contract (approximately 10% of work effort)



MV&E Milestones

- Effective date of contract is April 28, 2010
- Work authorization contract
- Executed first work authorization covering Administrative Support Services to Contract on May 10, 2010
- Evaluation pre-planning work has commenced
- SEP funded projects must be completed by March 31, 2012
- EEBG Projects must be completed by September 13, 2012
- MV&E contract ends June 30, 2013



Study Design Standards

- Department of Energy's evaluation guidelines for ARRA-funded programs
- International Performance Measurement and Verification Protocols
- CPUC's evaluation protocols (when possible)



What's Different about ARRA-related Evaluation?

- Short timeframes
- Jobs will be assessed
- Carbon emission reductions (California specific versus national average)
- Attribution of effects (jointly funded projects, market transformation)



Questions? Thank You!

Contact:

Monica Rudman

(916) 654-4462

mrudman@energy.state.ca.us