



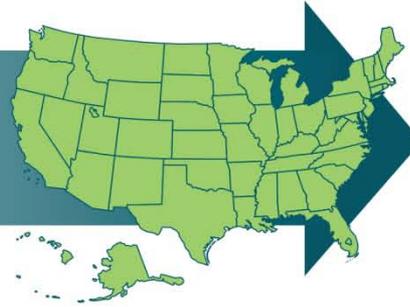
SEE Action

STATE ENERGY EFFICIENCY ACTION NETWORK

Evaluation, Measurement, and Verification Working Group Blueprint Executive Summary

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The Evaluation, Measurement, and Verification Working Group of the State Energy Efficiency Action Network is committed to taking action to increase investment in cost-effective energy efficiency. This Blueprint was developed under the guidance of and with input from the Working Group. The document does not necessarily represent an endorsement by the organizations of Evaluation, Measurement, and Verification Working Group members.

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EM&V Challenges

- EM&V is sometimes seen as expensive, not credible, not timely, not transparent, and as a burden, not a benefit.
- Jurisdictions calculate and define savings differently, utilize different deemed savings values and baseline assumptions, tend to not report uncertainty in results, and apply different levels of independent review. This can both make meaningful comparisons difficult and hurt the credibility of energy efficiency when savings values for the same measures, even when justifiable, vary from one state to another.
- Jurisdictions have difficulty reliably determining savings directly attributable to their programs and also use different methods and apply different net savings factors (e.g., free riders, spillover, snap back) when estimating net savings. This makes it difficult to determine program attribution, define and set standards for rigor and accuracy for net savings given different policy objectives, and assess broader “net” market effects of energy efficiency programs.
- While most EM&V focuses on first-year savings, there is a lack of support for analyses of savings persistence. Similarly, comparative analysis of alternative program designs, estimates of market changes, and mechanisms for prompt and regular program feedback are not emphasized.
- EM&V practices have yet to evolve to take advantage of the Smart Grid infrastructure that allows for increased data collection.



* Adapted from Schiller et al 2010 *Review of Evaluation, Measurement and Verification Approaches Used to Estimate the Load Impacts and Effectiveness of Energy Efficiency Programs*
www.seeaction.energy.gov

Goals

- SEE Action Goal: Capture all cost-effective energy efficiency by 2020
- EM&V Working Group Goal: Transform EM&V to yield more accurate, credible, and timely results that accelerate deployment and improve management of energy efficiency
 - Credibility: Increase the accuracy and transparency of reported savings by improving the accuracy of measuring and verifying savings, and standardizing the reporting of energy savings
 - Timing: Accelerate availability of preliminary results to within (at least) 3 months of implementation
 - Cost: Proactively balance the cost of EM&V with the potential value it has to particular audiences/stakeholders while working on ways to reduce the overall cost and intrusiveness of certain methods. SEE Action prioritizes improving credibility and timing in the short term and lowering costs in the long term



Scope

- While EM&V is most frequently associated with ratepayer-funded programs, SEE Action includes energy efficiency EM&V regardless of funding source
- This blueprint addresses both market needs and specific actions the SEE Action network can take to address those needs
- While SEE Action addresses all markets, the current focus of the EM&V working group is residential, commercial, and industrial programs administered by:
 - Utilities
 - Third-party program administrators
 - Local and state government entities
 - Private and public entities (for their own facilities)
- Focus on:
 - High-level capacity building and tools, best practices dissemination, both resource development and leveraging existing resources and infrastructure
 - Largely resource acquisition rather than market transformation
 - Uniformity of EM&V definitions and comparability of reported EM&V results (e.g., energy and demand savings)



Key Solutions & Actions to Achieve the Goal

GOAL: Transform EM&V to yield more accurate, credible, and timely results that accelerate successful energy efficiency deployment and management

Develop a foundation for improving credibility and cross-jurisdiction comparability

- 1. Consistent savings estimates and consistent and comparable reporting**
Resource for calculations, uniform definitions and common forms
- 2. Review and update EM&V resource guides**
Impact evaluation techniques explained
- 3. Uniform methods and/or standards**
Set of voluntary methods/protocols

Explore new methods to address emerging issues and technologies

- 4. Explore new technology solutions**
Use Smart Grid and AMI to measure and verify savings
- 5. Innovative analysis techniques**
New methods provide more efficient EM&V and maintain rigor

Build capacity and increase adoption of best practices

- 6. Resource accessibility and tool development**
National or regional databases of reports, plans, and stipulated savings values
- 7. Training**
Increase the number of EM&V practitioners and their level of expertise and experience

*EM&V is different from the other SEE Action working groups; it does not focus on a sector or one issue. Hence, each of the solution pathways are highly interconnected.



EM&V Audiences

Their Needs and Concerns

What decisions must be made?

Planners and System
Operators

- Prove energy efficiency is a viable resource.
- Need data accurate and complete enough to analyze energy efficiency for resource planning and system operation (could include hourly impacts and load shape).

Program
Administrators

- Run programs effectively/improve programs; compare programs.
- Demonstrate that programs achieved expected savings.
- Pass program cost-benefit tests.

Commissions

- Need credibility so that planning authorities will incorporate energy efficiency into load forecasts and resource planning.
- Prove energy efficiency programs and portfolios are cost effective.
- Determine attribution and/or appropriate incentive payments. Compare programs

State and Federal
Government

- Measure and verify savings. Know that targets are met and energy efficiency benefits ratepayers. Compare savings across various programs and potential program activities.
- Improve grant management by improving best practices.
- Use energy efficiency data to determine GHG and other environmental impacts.

Finance Community

- Need data sufficient to show that efficiency is a viable investment.

Host Customers

- Need feedback justifying their participation (current EM&V uses hosts solely as data sources). Could benefit from individualized results from M&V activities.

(EM&V Practitioners)

- Need better access to tools and data, support for capacity building, more people.

SEE Action EM&V Priority Deliverables

- 2010 (National Action Plan for Energy Efficiency)
 - To identify current issues and needs, completed survey of working group members and published LBNL report: *Review of Evaluation, Measurement and Verification Approaches Used to Estimate the Load Impacts and Effectiveness of Energy Efficiency Programs*.
 - To provide guidance on the evaluation process and a variety of key issues, published *Model Energy Efficiency Program Impact Evaluation Guide*.
- 2011
 - Priorities identified in 2010 survey and already underway
 - To plan for potential implementation of national efficiency policies and support up and coming states, completed report [National Energy Efficiency Evaluation, Measurement and Verification Standard: Scoping Study of Issues and Implementation Requirements](#).
 - To improve consistency and access to information, complete scoping study on national Technical Reference Manual and national evaluation plan and report databases.
 - To improve accuracy, consistency, and comparability of savings estimates, draft short savings reporting form and work with EIA on Form 861.
 - Upcoming SEE Action priorities
 - To meet needs identified by states and localities new to energy efficiency, update *Model Energy Efficiency Program Impact Evaluation Guide*.
 - To make the best use of already existing resources, communicate concepts through outreach and improved resource accessibility.

