



REGIONAL EVALUATION,  
MEASUREMENT & VERIFICATION FORUM

## Regional EM&V Forum 2010 Project Agenda Overview (December 2009)

### Table of Contents

Introduction.....	3
Protocol Development Projects.....	5
Research & Evaluation Projects.....	8
Education & Information Access Activities.....	11
2010 Forum Budget.....	12



## Introduction

Launched in 2008, the Regional Evaluation, Measurement and Verification Forum's (EM&V Forum) purpose is to support the development and use of consistent protocols to evaluate, measure, verify, and report the savings, costs, and emission impacts of energy efficiency across a region that covers more than ten states.

The Forum conducts **Protocol Development** projects to develop common EM&V protocols or guidelines that support the calculation of energy efficiency and other demand-side resource impacts, including energy and demand savings, costs, and emissions, and the tracking and reporting of such impacts to support state and regional energy and environmental policy goals. The Forum conducts coordinated **Research and Evaluation** projects to inform the development and use of common EM&V protocols and savings assumptions, provide cost efficiencies for states' EM&V activities, and help ensure consistent, robust results in assessing the accuracy of demand-side resource impacts. Finally, the Forum undertakes a range **Education & Information Access** activities to ensure that Forum products are publicly available, easily accessible and understood through various venues to disseminate Forum results, recommendations and products; provides technical support for the use of Forum products; protects confidential information; and holds an Annual Forum Public Meeting.

The Forum's projects are selected based on the following criteria:

- The project makes sense to do regionally
  - Topical issue for many/most states
  - Saves states money compared to the alternative of conducting study on its own
- If adopted by Forum states, the results of project will:
  - Improve the credibility of EE savings
  - Reduce barriers to participation of EE resources in wholesale capacity markets
  - Improve state and regional demand-side resource and energy planning, implementation and evaluation by having readily available and consistent inputs, protocols and reporting format and tools
- The project results can inform/guide national EM&V protocol development efforts, where the region brings a single voice to the national dialog

The proposed 2010 Forum agenda is developed/informed by the following process:

- 1) NEEP develops an initial list of possible projects informed by: a) Forum Three-Year Plan; b) areas of interest identified informally throughout the year by Forum participants; c) input from Project Committee co-chairs (May/June);
- 2) NEEP conducts a survey of list of projects with Forum participants to prioritize projects of greatest interest by each state (July);
- 3) Based on survey results, NEEP develops a proposed project agenda and developed estimated budgets (based on feedback from Project Committee co-chairs and outreach to evaluation experts) and circulates to the Project Committees for further discussion, changes and refinement (August/September quarterly meeting);
- 4) NEEP conducts additional outreach to each Forum state to solicit further feedback and interest in the project areas, which also helps to further shape project scope/needs based on that feedback (September/October);



- 5) Through the above process, a recommended agenda goes to the Forum Steering Committee for adoption, where a consensus resolution reflects a statement of interest to participate in specific Forum project, where subsequent consideration by the states is given for their support and financial commitment in a manner appropriate to each state (October/November). At this juncture, the statement of interest does not bind any state to fund any particular project;
- 6) Following Steering Committee adoption of the proposed project agenda and budget, NEEP convenes project subcommittees, which play the critical role of informing the full development of project scopes; and
- 7) Funding commitments are provided to NEEP upon further project scope and RFP development (December-February)

The Forum is a participant driven process, and therefore relies on Forum stakeholders' active input into the project priorities and scope development. This overview of projects scopes is at a high level and will be further developed as NEEP obtains additional feedback from Forum participants, and ultimately from the project subcommittees that will be formed to fully scope each project in early 2010.

## PROTOCOL DEVELOPMENT PROJECTS

### PD1. Establish Guidelines and Common Approaches to Calculate/Address Net Savings

**Purpose:** This project goal is develop greater consistency in how states in the region address and assess net savings, focusing on free-ridership, spillover, and net-to-gross ratios. The project will build from findings and recommendations from 2009 projects - A2 EM&V Methods - which includes a survey of net savings definitions and methods; A3: Common Reporting Guidelines - which will report on how net savings is currently reported; and B3: Scoping Study on Net Savings, which will generate a white paper that will review different uses of free-ridership, spillover, and net to gross ratios currently in use both across programs and across states in the region, and the various policy needs that these parameters are intended to serve. *NOTE: Per discussion at Oct 27 Steering Committee meeting, project scope may change or project may be deferred to 2011. It was suggested that the Forum wait until 2009 B3 scoping paper is complete (Q1 of 2010) and then address project scope as 2011 project, including needs identified by some states to develop net savings assumptions (NY, NJ and MD).*

**Scope/Approach:** This project will consist of two parts - Phase 1 will involve facilitating policy discussion on issues/options for addressing net savings, and will include comparing air regulatory and energy efficiency interpretations, assessment methods, and applications of these parameters in the region (building from 2009 project findings). Phase 2 of the project will develop methods/approaches to addressing and/or calculating net savings for various types of measures, and associated materials (possibly including survey instruments, models, timetables, algorithms, roadmap of data that need to be collected) that can be used to estimate net savings. At this time, it is not expected that this project will involve conducting impact evaluations to estimate net savings impacts. This will be considered for 2011.

**Timeline:** Work on Phase I will begin in the third quarter of 2010 and Phase 2 will also begin in 2010 and continue into 2011.

### PD2: Develop Common EM&V Approaches/Methods for Emerging Technologies/Programs

**Purpose:** The project goal is to create greater consistency in, and understanding and application of the types of methods used to calculate energy and demand savings to meet differing policy and/or market goals. The project will develop common approaches/methods for calculating electric and gas energy efficiency savings for emerging technologies and program designs, where "emerging" is defined as technologies that are in the early stages of being included in energy efficiency programs for which there is limited experience and research available to inform planning and impact reporting (e.g., LEDs, ductless mini-splits, consumer electronics, on-demand water heating, super-insulation (innovative home performance measures)). The project will not address R&D type projects/issues nor related economic development aspects. Results of this project will complement EM&V methods guidelines developed in 2009 for existing program types/measures.

**Scope/Approach:** The project will focus on developing common EM&V methods for emerging technologies/programs using a scope similar to what was conducted for Project A2 in 2009. The project subcommittee will identify and propose priority emerging technologies and for broader Forum participant review and selection. The project will consist to two parts:

**Part A:** This project component will involve conducting secondary research of current practice/methods used (where programs/pilots exist), and conducting primary research where needed to develop new EM&V methods for priority emerging technologies. Scope will include developing recommended common procedures and methods for estimating



preliminary savings; calculating gross evaluated savings; determining baseline conditions and addressing levels of certainty in savings estimates.

**Part B:** The second project component will involve collecting secondary data for existing savings assumptions (e.g., deemed values and input assumptions) and algorithms for the selected priority emerging technologies/programs, identifying data gaps and where further evaluation needs exist, and develop where appropriate recommended deemed savings values. Both Parts A and B will involve research within the Northeast and mid-Atlantic, as well as in other parts of the country where there is experience/data for the priority emerging technologies/programs. The project will also coordinate with any national projects and efforts to address national EM&V methods protocols, including the North American Energy Standards Board M&V standards efforts, and US EPA and US DOE's National Action Plan on Energy Efficiency EM&V project.

**Timeline:** Work to begin in 3<sup>rd</sup> quarter/July 2010 and be completed in 1<sup>st</sup> quarter 2011.

### PD3: Develop Guidelines for Incorporating EE into System Planning

**Purpose:** The project purpose is to develop guidelines for incorporating energy efficiency impacts into system planning in order to build greater consistency in how electric utilities/distribution companies and system planners forecast efficiency as part of their load forecasting efforts. This will assist regional ISO/RTO comparisons and will support power pool interchange planning. The project will build from high-level results of the 2009 Project A3 *Develop Common Reporting Guidelines* which is surveying energy efficiency data needed by system planners to inform energy system planning, and identifying where/how information to support system planning needs is reported or is not available.

**Scope/Approach:** The 2010 project will involve researching and documenting current forecasting practice/methods/models at ISO New England, New York ISO, and PJM Interconnection, and the extent to which and how EE is reflected in such forecasting. The research will include addressing how "naturally occurring" efficiency is defined and currently incorporated into forecasting practices. The project will also address the interface and methods used for forecasting energy efficiency for wholesale capacity purposes relative to energy system load forecasting purposes. In developing recommended guidelines, the project will also research forecasting practice in other parts of the country where efficiency has been effectively incorporated into systems planning (e.g., the northwest). The project subcommittee, once convened, will recommend how best to collect information and interface with the regional ISOs/RTOs to inform this project.

**Timeline/Status:** Proposed to begin in July 2010 and be completed in December 2010.

### PD4: NAESB M&V Standards Development for Energy Efficiency

**Purpose:** With the completion of developing M&V standards for wholesale and retail demand response, the North American Energy Standards Board (NAESB) is now turning to developing wholesale EE M&V standards and retail EE M&V model best practices (MBPs). While NEEP monitored NAESB developments during 2008-09, NAESB's EE M&V project officially kicked off in late September 2009. The purpose of this NEEP project is to ensure that the Northeast and mid-Atlantic regions are adequately represented at the NAESB meetings, and that the Forum, given its geographic scope and reach, can effectively influence NAESB's recommended standards/MBPs, where such recommended standards/MBPs are aligned with Forum products, including the Glossary of Terms developed in March 2009, and the Forum's recommended Guidelines for EM&V Methods (forthcoming in early 2010).



**Scope/Approach:** This project will focus on providing technical input and comment into developing the NAESB wholesale and retail standards/MBPs, supported by leadership from NEEP in NAESB working groups to ensure Forum input and representation. Such efforts will also include bringing completed Forum products to the NAESB process for consideration as possible protocols to adopt (e.g., the EM&V Methods Guidelines under development which is scheduled to be completed by year end). With NEEP's experience coordinating and facilitating input into the ISO New England M&V Manual in 2007, and then into the PJM M&V manual (in early 2009), NEEP will provide similar coordination/facilitation efforts in the NAESB process. This will include helping to ensure coordination with other national EM&V efforts, such as the NAPEE EM&V project.

**Timeline/Status:** Starting in Fall 2009 through 2010.

#### PD5: Develop Common Savings Assumptions/Algorithms (Part 2) - Mid Atlantic

**Purpose:** The purpose of this project is to continue the 2009 project on development of a technical reference manual (TRM) for the mid Atlantic states with common savings assumptions, input parameters, and algorithms for priority end-use measures. The specific scope of this effort will be established in consultation with the subcommittee during the course of the 2009 project effort.

**Scope/Approach:** This project will either develop common savings assumptions for measures that were not able to be addressed in the 2009 project, or it will begin turning the TRM into an online product. The project will build from existing available data from within region, and other data as applicable.

**Timeline/Status:** Work is planned to begin in fourth quarter 2010, with completion expected in first quarter 2011.



## RESEARCH & EVALUATION PROJECTS

### RE1: Develop Common Incremental Cost Assumptions

**Purpose:** Develop common, up-to-date, documented electric and gas efficient measure incremental cost assumptions (The number of measures will be based on what can be supported by this budget, and the measures/sectors selected will be based on input from the subcommittee about their priorities during the RFP scoping-process). Review current documentation of costs in the region and where appropriate, establish common assumptions for use in measure screening, other planning and analysis. Conduct primary research to develop incremental cost assumptions for priority sectors and recommend future research to fill gaps as necessary. Forum participants informing this project have noted there is a strong regional need for comprehensive update of incremental cost information and that the most viable approach is to undertake data collection for subsets of measures rather than tackle all measures in one project.

**Scope/Approach:** This project will consist of a) selecting a subset of priority measures/sectors for study, b) reviewing and comparing current information and documentation, c) collecting data on costs of high efficiency and conventional (baseline) versions of the measure equipment in multiple sub-regions from expert sources, e.g. manufacturers, specifiers, and d) analyzing and reporting results, including recommended common assumptions, strategies and schedules for updates.

**Timeline/Status:** Project is planned to begin and end in 2010.

### RE2: Loadshape Study Project Phase 2 (Continued/Expanded from 2009)

**Purpose:** EMV Forum Loadshape studies are conceived as a multi-phase, multi-year effort. This project is intended to extend work that is being planned and initiated as the 2009 Phase 2 Loadshape Project. The ultimate goal of the Forum's loadshape studies is to make loadshape data - impact of electric energy efficiency programs during identified periods of time (e.g. hourly, seasonal and annual consumption data used to analyze coincidence factors and other usage patterns) available to Forum participants for use in implementing energy efficiency programs, participation in capacity markets, and meeting air/environmental regulatory needs.

**Scope/Approach:** Residential and commercial lighting and C&I Unitary HVAC measures were identified as priority information needs based on the Phase 1 Loadshape Report and responses to a poll of Forum members about their priority information needs. An RFP is under development for a study to address residential and commercial/industrial lighting; it will expand on the publicly available loadshape data from the region and elsewhere (e.g. California) with data collection as needed to supplement available data. The focus of this study will be on using compilation data, i.e. a combination of data from multiple sources, data collection to supplement existing "usable transferable" data, and modeling. In addition to peak coincidence factors, annual loadshapes and high electricity demand days are among the products that will be developed. The budget for this lighting project will come from funds allocated in 2009, but it is not expected to consume the entire 2009 budget.

In early 2010 and RFP will be developed to sample, collect, compile and analyze data on commercial/industrial unitary HVAC measures to generate results (coincidence factors, etc.), applicable in various climate zones within the region. Funds from 2010 are needed to supplement money available from 2009 in order to conduct the unitary HVAC study. Data collection for this project will take place in summer. As the Phase 1 report and survey of

participants indicated, loadshape data is needed for many other measures. The Forum expects to develop a 2011 study to address additional loadshape needs. Work on the proposed scope, RFP, and budget for the 2011 effort will begin early in 2010, and will be informed by the experiences with the lighting and HVAC projects.

**Participating States:** All Forum participating states have funded the 2009 Phase 2 project; this 2010 project extends the budget and makes the full scope of these two efforts - lighting and HVAC - in the region possible.

**Timeline/Status:** The unitary HVAC RFP will be completed in or before January 2010 and results are expected in third quarter 2010.

### RE3: Estimate EE Impact on Advancing Energy Building Codes

**Purpose/Background:** The purpose of this project is to develop common strategies and approaches for evaluating savings associated with improved codes and standards and, still more challenging, approaches to estimating savings from efficiency program administrators' activities to advance codes and standards. California currently claims savings from activities to advance codes, and Massachusetts has already begun some preliminary investigation of this issue with respect to residential new construction only. In 2009, funds for a "white paper/scoping project" on this subject were approved in the Forum budget. Since this white paper RFP will likely be launched in early 2010, the Forum is proposing that the white paper and the 2010 follow-up project be combined into one project (one RFP). This overall project will consist of two parts: 1) the white paper/scoping effort that will provide recommendations for common strategies, and 2) an implementation of recommendations.

**Scope/Approach:** Phase 1 white paper will review issues, including: what activities by program administrators contribute to advancing energy codes and standards, what existing practices are used to estimate savings from these activities, their applicability to the region and programs, and considerations and recommendations relating to how regional (and national?) consistency can be achieved. Phase 2 will be implementation of recommendations - specifically development of a method and materials (possibly including survey instruments, models, timetables, algorithms, roadmap of data that need to be collected) that can be used to estimate savings within the states in the region.

**Timeline/Status:** This project is expected to begin early in 2010 with completion expected in 2010 or 2011.

### RE4: Measure Persistence Study - Phase 2

**Purpose:** The purpose of this 2010 project is to extend the 2009 C/I Lighting Measure Persistence study. The first priority for these funds is to use them for increasing the sample size proposed in the 2009 project, should the subcommittee and contractor determine that increased sample size is advisable. If funds are not needed for an increased sample size, a project will be developed to estimate persistence of another energy efficiency measure, to be determined by the project subcommittee.

**Scope/Approach:** The first step in this effort, which is ongoing, is gathering information about the nature and quantity of program data available on lighting programs in the region.

Assuming there will be sufficient lighting program data, Forum participants in New England and New York who are supporting the 2009 study recommended extending the 2009 project budget by committing funds in 2010 to allow for the possibility of increasing sample size. The increase in budget permits the contractor to explore more options for development of a sampling plan. The approach to the persistence project has been to develop checkpoints, and



to ask the subcommittee and contractor to decide at each checkpoint, on whether to proceed to the next set of tasks within the 2009 project scope.

**Timeline/Status:** The 2009 project kicked off in third quarter 2009, and completion is expected to be completed by end of 2010.

#### RE5: Natural Gas EE Research & Evaluation

**Purpose:** Residential and/or C&I gas program research or evaluation to meet shared program information needs. One or more priority end-uses TBD and studied across the region (e.g., on-demand water heating impact estimation, early retirement of furnaces, gas/solar thermal DHW, building envelope impacts). Forum participants have noted that opportunities for gas program evaluation have been somewhat constrained in recent years. One purpose of this project is to assist Forum participants in updating gas program results, in a timely and cost-effective way.

**Scope/Approach:** The subcommittee will identify a gas program and measure or set of measures commonly promoted within the region and contract for an impact evaluation in which recommended evaluation methods (per results of project A2) will be applied to develop savings estimates and any appropriate factors needed (e.g. weather-sensitive adjustment factors) so that the results are applicable to relevant Forum participants in the region.

**Timeline/Status:** This project will take place during 2010, possibly extending into 2011.



## FORUM OPERATIONS, AND EDUCATION & INFORMATION ACCESS ACTIVITIES

For 2010, the Forum operational, management and education, information and communications activities will include:

1. Facilitate Forum Steering Committee, Project Committees, and subcommittees;
2. Manage third party contracts for over ten projects;
3. Update and maintain EM&V library of studies/research and other EM&V resources;
4. Maintain and improve EM&V Forum website;
5. Hold Annual Forum Public Meeting;
6. Conduct Forum communications and outreach to Forum participants through monthly updates and quarterly newsletters;
7. Monitor and participate in state, regional (ISO-NE, PJM), and national M&V meetings/efforts (NAPEE, NAESB M&V projects);
8. Conduct outreach to states (e.g., presentations, attend state evaluation meetings, submit comments in proceedings) regarding state adoption of Forum products approved by Steering Committee;
9. Plan and develop 2011 Forum agenda and budget with outreach to Forum participants, subscribers, grant funders, and other stakeholders; and
10. Maintain Forum operational policies, including ensuring access to Forum materials and protecting confidential information