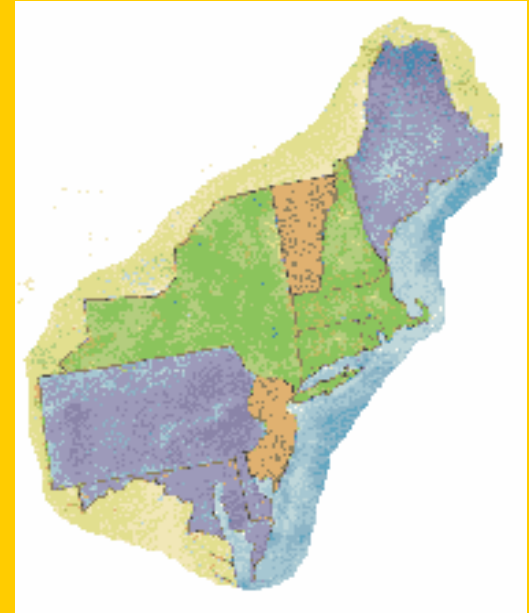


**New England
State Program Working Group:
Energy Efficiency M&V Standards
for the ISO Forward Capacity Market**



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Overview

1. Background – policy needs for common EE M&V protocols in the Northeast
2. Emergence of Forward Capacity Market (FCM) - role of Demand Resources and need for M&V
3. State Program Working Group (SPWG) on M&V – input into ISO M&V Manual development and other efforts
4. Next steps



Background

- NEEP report “The Need for and Approaches to Developing Common Protocols to Measure, Verify and Report Energy Efficiency Savings in the Northeast” (http://www.neep.org/files/Protocols_report.pdf)
- New state and regional energy and environmental policies and strategies emerging that treat EE as a resource
- Success of state and regional strategies may depend on creating a common currency for EE savings that is credible and transparent

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Background cont.

Examples of Needs for Common M&V Protocols

- States increasingly treating EE as a resource – EEPS developments in CT, ME, RI, CT Gap RFP, ISO-NE FCM
- Regional Greenhouse Gas Initiative – tracking EE related carbon emission reductions
- Regional EE modeling needs (NE Markal model, others)
- Natural gas supply - role of EE in reducing NG demand for electricity generation
- Modeling interchange and trade between NE, NY and PJM ISOs/RTOs



Emergence of the ISO FCM: Role of Demand Resources and M&V

- Summer 2006: FCM development and role of Demand Resources presented immediate need for M&V standards
- New England Conference of Public Utility Commissioners (NECPUC) passed Resolution committing staff resources to work together to develop common M&V protocols
- For Transition Period, ISO relies upon state PUC approved M&V Plans
- For FCM, state M&V Plans must comply with ISO M&V Manual

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New England State Program Working Group (SPWG) on M&V

- SPWG convened in Sept 2006, represented by state PUC staff, EE program administrators, EE evaluation consultants
- NEEP serving as facilitator and project manager
- Goals: provide coordinated input into ISO's development of the M&V manual; develop common default measure life assumptions; develop common coincident peak factors consistent with ISO peak period defns (on-peak, seasonal peak, critical peak)
- Joint state funding for M&V contractors (GDS Assoc. with Summit Blue and Megdal Assoc. and RLW Analytics) to perform work
- Focus on state EE programs, but coordinated with merchant efficiency providers and other DR providers

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SPWG Priority Issues for ISO M&V Manual

- a) Acceptable M&V Methods
- b) Precision Requirements
- c) Baseline Conditions
- d) Monitoring Parameters and Variables
- e) Bidding Net vs Gross Demand Reduction Value (DRV)



Acceptable M&V Methods in ISO M&V Manual

Manual focuses heavily on International Performance Measurement and Verification Protocol (IPMVP) Framework:

Option A - stipulated baseline and savings using verified equipment performance (e.g., watts, kW/ton) or measurement of other variables;

Option B - measured and/or stipulated baseline, verified performance by estimating tool calibrated with end-use data;

Option C - comparison of similar buildings with and without energy conservation measures using whole building data (hourly or monthly) using utility billing analysis; or

Option D: stipulated baseline, verified performance using simulation model calibrated with whole building data.

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Acceptable M&V Methods cont.

- **Alternative M&V Methods:** Provider can propose alternative methodologies but must demonstrate that they are equivalent to one of the accepted methods Option A-D
- **Other Acceptable M&V Techniques:** Several methodological techniques may be applied to one or more of the Option A-D methods:
 - Engineering Calcs and Audit Results: Provider may use engineering algorithms to calculate the Project's DRV where engineering algorithms must be supplemented with data collected on the energy-consuming equipment effected by the measures.
 - Load Shape Analysis: Provider can use verifiable measure hourly load shapes to calculate a Project's DRV. Measure load shapes must be based on actual metering data, load research, and/or simulation modeling.

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Precision Requirements in FCM Rule and M&V Manual

- In FCM Rule: explicit precision requirement: +/- 10% precision at an 80% level around DRV, but refers to M&V Manual for description and application of DRV precision requirement
- In M&V Manual:
 - >> similar requirement as in FCM Rule but allows flexibility to meet 80/10 precision around individual components of DRV
 - >> for sampling, precision requirement is 80/10 with options for applying precision level in cases where multiple samples are used

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Baseline Condition Requirements in M&V Manual

Manual includes explicit baseline condition requirements for:

- Projects in which existing and operating equipment is removed from service
- Projects in which failed equipment is replaced by a more efficient equivalent or by an alternative strategy for delivering comparable output
- Projects in which operating equipment is replaced with a more efficient equivalent unit
- New construction or major renovation projects

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Monitoring Parameters and Variables Requirements in M&V Manual

- M&V Plan must describe variables that will be measured, monitored, counted, recorded, collected, and maintained to determine a Project's DRV
- Specific requirements to collect and maintain information for Projects affecting different types of measures or systems
- Flexibility provided to propose alternative means of acquiring or estimating information.



Net vs Gross Peak Demand Reductions for Purposes of the FCM

- Fall 2006: Unclear whether states should bid gross or net demand reductions into the FCA
- “Net” includes adjustments to account for attribution of savings e.g., free-ridership and spillover effect
- States currently report different levels of savings to their PUCs
- ISO M&V Manual makes no distinction between net vs gross
- NECPUC commissioners resolved/voted to bid “gross” DRV

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Next Steps

- M&V Manual to be voted on by Markets Committee March 6, 2007
- Qualification Package (with M&V Plans) for 1st FCA due to by ISO June 15th 2007
- SPWG completing coincident factor analysis to inform Show of Interest for 1st FCA and M&V Plans in June 2007
- NEEP convening regional evaluation committee to identify and coordinate regional evaluation needs
- NEEP exploring options for developing central repository to post state M&V Plan reference documents (evaluation studies, load shape analyses, etc) for public access including for merchant efficiency providers

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Questions?

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