



Northeast Energy Efficiency Partnerships

EM&V Forum Workshop

Designing Pilots and Acceptance Criteria for EM&V2.0 Tools

September 22, 2016
North Haven, CT

Welcome to the Workshop

Purpose and Goals



- The goal of this workshop is to explore and help develop consensus on:
 - Appropriate acceptance criteria for use of M&V2.0 results as sources of savings estimates; and
 - Pilot design to test use and performance of automated M&V software tool/ approach to quantify energy efficiency savings in commercial facilities.
 - More generally, continue to build common understanding of issues and opportunities associated with use of automated M&V to support energy efficiency program impact estimation.



Agenda:



9:45 Pilots: The Value Proposition and Group Brainstorm

10:15 Residential Pilot Experience - Tim Guiterman

10:40 Break

11:00 Acceptance Criteria: Concepts and Q&A

11:40 Evaluation Perspective - Sue Haselhorst

12:00 Lunch

1:00 Acceptance Criteria: Proposal/ Facilitated Discussion

1:45 Why Pilot? CT DEEP Perspective - Diane Duva

2:00 Break

2:15 Commercial Building M&V2.0 Pilot: Straw Proposal

2:40 Stakeholder Group Input to Commercial Pilot

3:20 Next Steps

Thank You !

Hosts and Workshop Sponsors



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More Acknowledgements



EM&V FORUM 2016 SPONSORS

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WORKSHOP PRESENTERS

Diane Duva, CT DEEP

Jessica Granderson, LBNL

Tim Guiterman, EnergySavvy

Sue Haselhorst, ERS

NORTHEAST ENERGY EFFICIENCY PARTNERSHIPS STAFF

DOE, CT DEEP, EVERSOURCE CT, UI, LBNL & NYSERDA, NH PUC, RI OER, VT DPS

SUPPORTING SEP GRANT: "Integrating New Approaches"

Forum Project: EM&V 2.0 Data Analytics and Automated M&V



Phase 1: Market Scan

- Trends in types and uses of M&V 2.0 software tools
- Profile vendors, case studies of software used and experience
- Support state understanding of the evolving EM&V landscape

Phase 2: Pilot Test

- Test software and M&V 2.0 approaches
- Compare results, accuracy, methodology
- Assess cost and scalability and applications
- Inform future protocols

Some Resources for the Road Ahead

- The Changing EM&V Paradigm: A Review of Key Trends and New Industry Developments, and Their Implications on Current and Future EM&V Practices, by DNV GL for the EM&V Forum, December 2015
- <http://docplayer.net/5044731-Big-data-new-opportunities-for-em-v-of-energy-efficiency-programs-annika-todd-erin-hult.html>
- Will the Measurement Robots Take Over Our Jobs? An Update on the State of Automated M&V for Energy Efficiency, by J. Granderson, LBNL, ACEEE Summer Study, August 2016
- It's About Time: Doing Integrated Real-Time Impact Evaluations, by S Haselhorst, ERS, ACEEE Summer Study, August 2016
- M&V 2.0: Hype vs. Reality, by J Kupser, DTE, ACEEE Summer Study, August 2016
- Driving it Home: Real-Time Measurement and Verification for Residential Programs, Tim Guiterman, AESP Magazine, 2016
- Ethan Rogers - ACEEE Intelligent Efficiency Labelling Initiative



Big Picture: Informing the Changing EM&V Paradigm



- The next generation tools offer a range of abilities, from customer intelligence, to end-use load disaggregation,.. and determining whole building and program savings.
- Useful insights from the next generation hardware and software tools require “good” data, not just “big” data.
- Good data and good evaluation is driven by good design.

Insights from Annika Todd and Erin Hult, Big Data: New Opportunities for EM&V of EE Programs, 2014, LBNL

