



CADMUS



Achieving Uniformity in EM&V Methods: The American Experience

Hossein Haeri, The Cadmus Group
Portland, OR

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The Uniform Methods Project (UMP)

- What UMP is about:
 - Develop methods for calculating measure- and/or program-level savings and protocols for verifying the savings
 - Cover common residential and commercial efficiency measures
 - Present step-by-step procedures
 - Address cross-cutting evaluation issues and requirements
 - Project sponsored by United States Department of Energy (DOE), administered by the National Renewable Energy Laboratory (NREL) and managed by The Cadmus Group

Impetus for UMP

- Current EM&V methods are based on bottom-up approaches, applied at measure or program levels
- Multiple ways to calculate impacts for the same energy efficiency measure or program:
 - Lack of methodological consistency leads to difficulty understanding and comparing results
 - Insufficient transparency about the assumptions and details of calculations diminishes credibility of the results
 - A 2012 review of existing Technical Reference Manuals (TRMs) in effect in 21 states also found inconsistencies in methods, inaccuracies and inexplicable variations in results

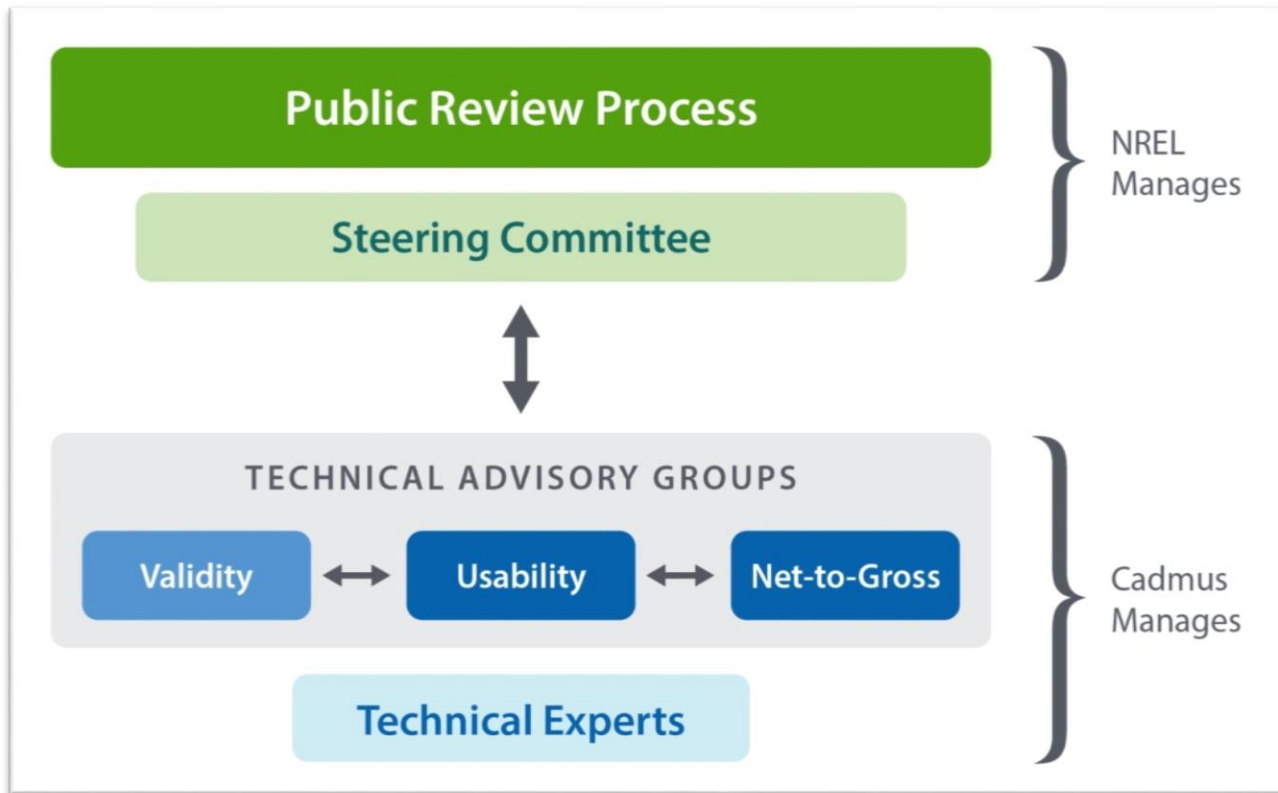
Project's Desired Outcomes

- Objectives:
 - Create greater consistency in calculations and methods and provide more transparency
- Benefits:
 - Support development of best practices for energy efficiency
 - Reduce uncertainty and improve credibility
 - Provide educational value to broad stakeholder community
 - Ultimately, lower M&V costs

Intended Audience & Beneficiaries

- Jurisdictions with no existing protocols or TRMs
- Regulators
- Program administrators
- Implementers
- Evaluators
- Three primary pathways for adoption
 - Formally by regulators
 - Adopted by program administrators and provided to implementers and evaluators
 - Recommended to clients by evaluators

Project's Organization



Steering Committee and Observers

- Lead and guide the process
- Members include:
 - Program administrators
 - Regulators
 - Investor-owned, public, and cooperative utilities
 - Utility associations
 - Federal and state agencies and non-profit entities
 - Energy efficiency advocates

Advisory Groups & Technical Experts



**Left Fork
Energy**



Jacobson Energy Research LLC 



GDS Associates, Inc.
Engineers and Consultants



BuildingMetrics, Inc.



Project's Scope

- A multi-phase project
- Develop and publish protocols for calculating savings for 15-20 measures
- Phase 1 complete:
 - 7 protocols for residential and commercial measures
 - 5 cross-cutting methodology guidelines
- Phase 2 in progress:
 - 8 additional measures
 - 1 revision
 - Methods for net-to-gross (NTG) methods

Protocol Contents

- What is in a protocols:
 1. Measure description and application
 2. Conditions of protocol application (s)
 3. Gross savings calculations
 4. Critical parameters
 5. M&V plan
 6. Data requirements
 7. Other evaluation issues
- What is not there:
 - Deemed values
 - Level of rigor, statistical confidence and precision
 - Timing and frequency of evaluations
 - Budget or expenditure level

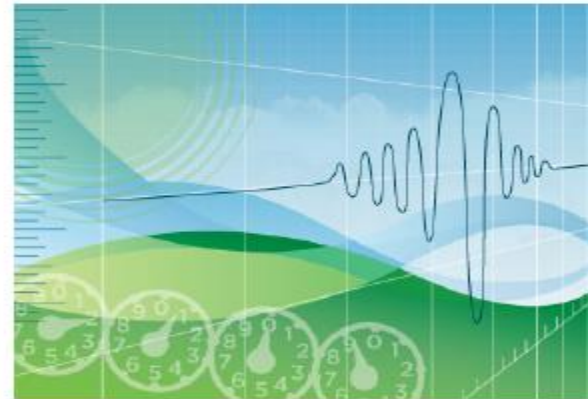
Looking Ahead

- Efficiency measures
 - Residential new construction
 - Strategic energy Management (SEM)
 - Commercial
 - Industrial
 - Gas measures
- Updates and refinements
- Tracking adoption and use
- Cross-cutting measures
 - Top-down methods
 - Reporting template

Where to Find it

- eere.energy.gov/ump

The Uniform Methods Project: Methods for Determining Energy Efficiency Savings for Specific Measures



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Tina Jayaweera
Hossein Haeri
The Cadmus Group
Portland, Oregon

NREL Technical Monitor: Charles Kurnik

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Project Team

- U.S. Department of Energy
 - Michael Li
michael.li@hq.doe.gov
- National Renewable Energy Laboratory (NREL)
 - Chuck Kurnik
chuck.kurnik@nrel.gov
- The Cadmus Group
 - Hossein Haeri
hossein.haeri@cadmusgroup.com
 - Arlis Reynolds
arlis.reynolds@cadmusgroup.com