KICKING OFF GUIDANCE FOR THE NORTHEAST

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“M&V 2.0” Or “data analytics”? -- Opportunities include program design & delivery, analysis, target marketing, measure and behavior performance, grid/demand management.…..

It is the utility version of an iphone – if we build it (AMI, IoT) they (apps) will come. We haven’t yet imagined most applications.

Regulators should:
• create appropriate incentives and access to facilitate innovation & experimentation, while avoiding micro-management.
• remember we care about net impacts and attribution
Guidebook to Adoption of M&V 2.0

• What problem are you solving?
• What are you measuring?
• What do new program models offer?
• What about regulatory considerations?
• How will a pilot address concerns?
• What new technologies are available?
GUIDANCE REQUIRED FOR “M&V2.0” OF ENERGY IMPACTS

1. UNDERSTAND DATA AVAILABILITY
   - Utility IT department engagement
   - Multiple utility database access

2. APPLY M&V BEST PRACTICES
   - P4P and the small savings problem
   - Grid Assets and TMY3 normalization

3. DEVELOP USE-CASE SPECIFIC GUIDANCE
   - “Science experiment” → SEM-like analyses, IoT
   - “Low touch/No touch” → Option C-like analyses

4. APPLY SAMPLING AND BIAS BEST PRACTICES
   - “Evaluability stratification”
   - In-stratum sampling strategies (random, other)

DTE Energy C&I Pilot–LED retrofit, small retail site*

*S One of thousands of weather-normalized site-specific 2017 participant savings loadshapes from batch-processed AMI data
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EVO Activities and Future Work Needed

EVO / IPMVP Recent Work and Subcommittees

- M&V 2.0
- Uncertainty
- EM&V
- Nonroutine Adjustments

Future Work Needed / Research Topics

- Uncertain Uncertainty
- Does it give us more or less information?
- Focus on Value not Cost Reduction
- “Ex-ante 2.0”
- Baseline Adjustment Ratios
Needs for M&V ‘2.0’

- Explaining these unfamiliar techniques to often lay audiences
- Determining true uncertainty around the models
- Explaining uncertainty to audience used to 90/10 with 68 samples (:-) inside stats joke)
- IPMVP Option C helps navigate some of these issues
  - Simplified equations can help…
Advanced Analytics will Require Advanced Uncertainty Analysis

CVR Example

![Graph showing measured and modeled demand with baseline period and load reduction during reporting period.](image-url)
IT’S ALL ABOUT...

▪ “Why”
  ▪ Residential or C&I? Measurement and/or optimization?

▪ “How”
  ▪ Energy savings calculations + source code ≠ reliable (near) real-time estimates

▪ “What”
  ▪ Reducing load when and where it’s needed requires actual meter and behind-the-meter data

▪ “Who”
  ▪ Regulatory matters.

▪ “When”
  ▪ Do you think the future will look like the past?
QUESTIONS?

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