

KICKING OFF GUIDANCE FOR THE NORTHEAST

Moderator: Phil Mosenthal, Optimal Energy

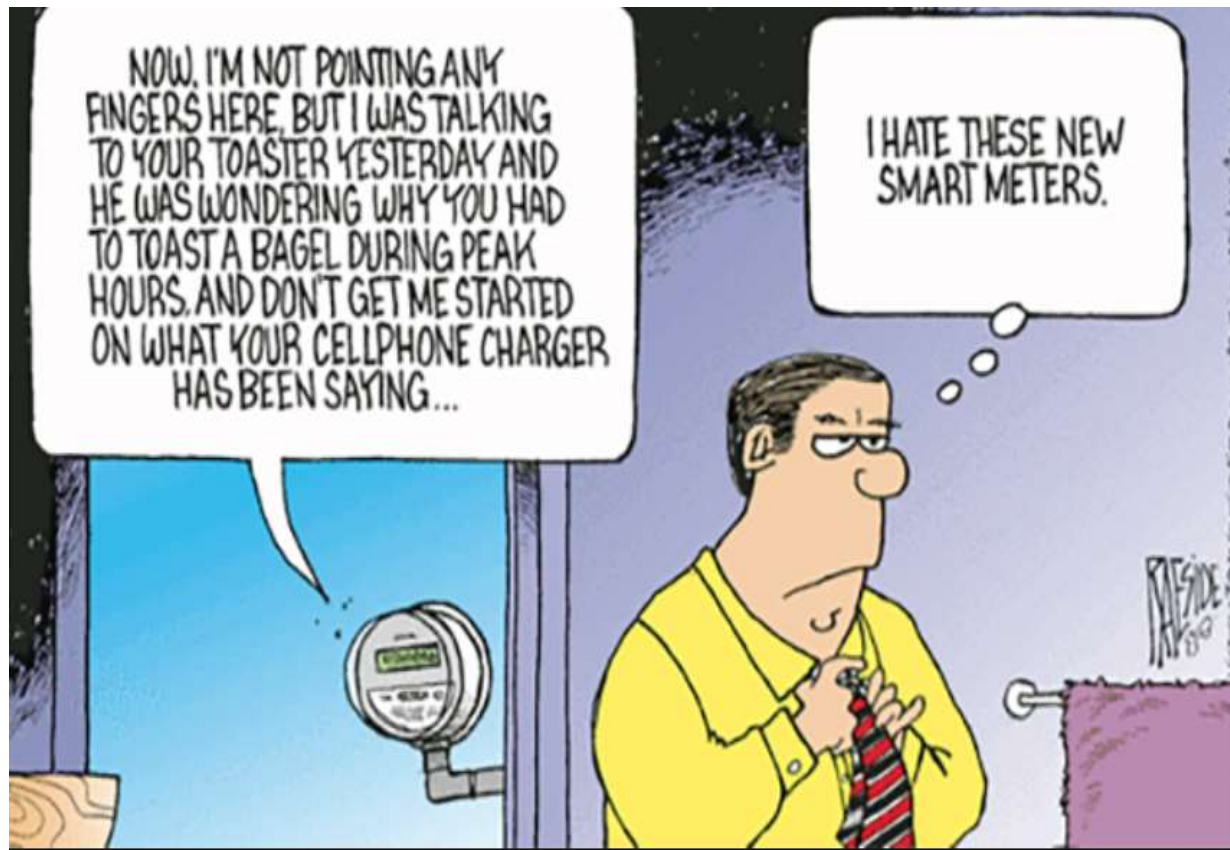
Ethan Goldman, VEIC

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Kevin Warren, Warren Energy Engineering

David Korn, Cadmus representing EVO/IPMVP Committee

Tim Guiterman, InfiSense

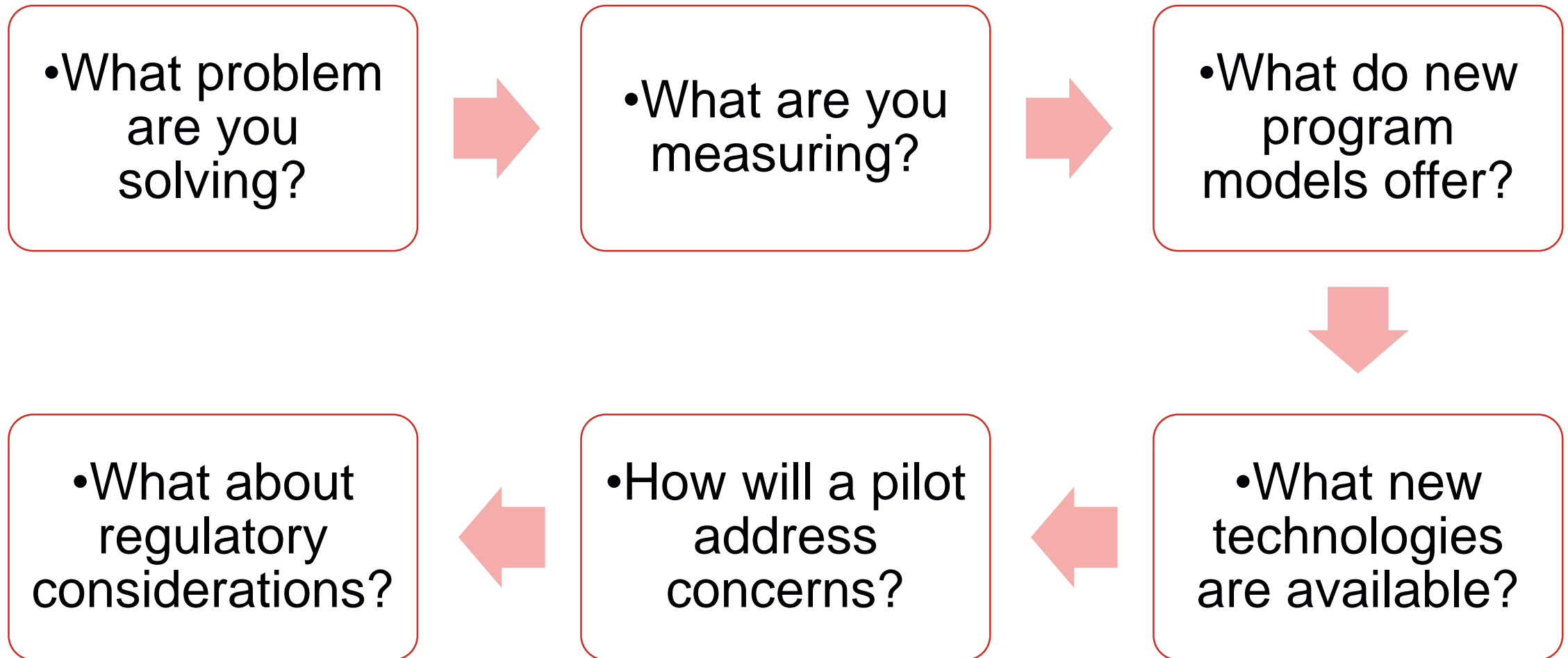


Regulators should:

- *create appropriate incentives and access to facilitate innovation & experimentation, while avoiding micro-management.*
- *remember we care about net impacts and attribution*

- ▶ “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

Guidebook to Adoption of M&V 2.0



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

Savings

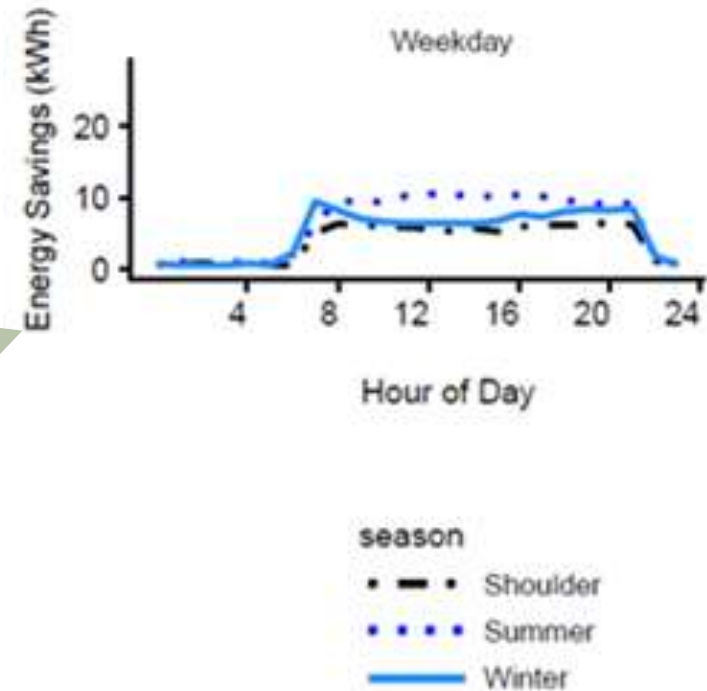
3. DEVELOP USE-CASE SPECIFIC GUIDANCE

- “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*



* One of thousands of weather-normalized site-specific 2017 participant savings loadshapes from batch-processed AMI data

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EVO / IPMVP Recent Work and Subcommittees

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

Future Work Needed / Research Topics

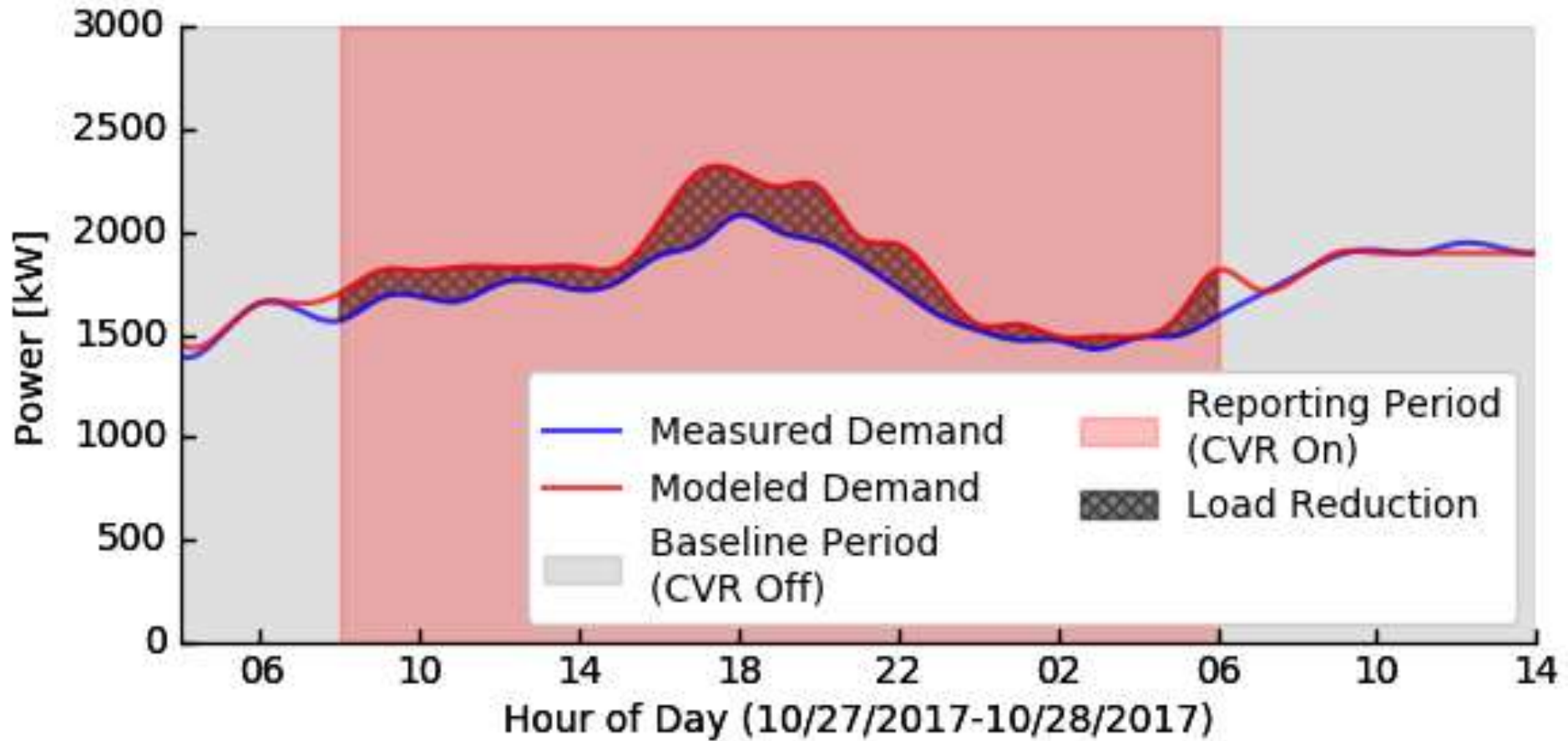
- Uncertain Uncertainty
- Does it give us more or less information?
- Focus on Value not Cost Reduction
- “Ex-ante 2.0”
- Baseline Adjustment Ratios

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



IT'S ALL ABOUT...

- “Why”
 - Residential or C&I? Measurement and/or optimization?
- “How”
 - Energy savings calculations + source code \neq 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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