

Ex Ante Alternatives: Initial “Best Practices” Findings from TRM Research



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Overview of Research

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- Reviewed over 20 TRMs from jurisdictions across the country
- Interviewed developers and users in “top jurisdictions”
 - ❑ Massachusetts
 - ❑ New York
 - ❑ Pennsylvania and Mid-Atlantic
 - ❑ Illinois
 - ❑ Texas
- Review prior literature/analysis on TRMs
 - ❑ Most analyses are about 5 years old
 - ✦ TRMs have evolved considerably since then
- Identified best practices for all aspects of ex ante framework
 - ❑ Process
 - ❑ Structure
 - ❑ Content

Key Finding

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Clear, written technical guidelines *and* effective processes are used concurrently to address complex technical questions, including:

- ❑ Measure complexity
 - ✦ How many iterations of a measure are sufficient?
- ❑ What is best available data?
 - ✦ When and how should more data be collected?
- ❑ Avoiding false precision

To create an effective ex ante process

Process “Best Practices” Findings



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- Technical collaboratives open to the public
- Predictable and regular update processes
 - ❑ Existing measures must be updated regularly
- Participation by regulatory staff is **key**
 - ❑ Speeds issue resolution
 - ❑ Speeds regulatory review
 - ❑ Fosters technical understanding between regulators and other stakeholders
 - ❑ Builds regulator trust of results
- Collaborative consensus sends strong signal to decision makers
 - ❑ Regulators maintain final approval authority but can depend on robust process and results
- Regulatory Commissions, not staff, approve final values

Structure “Best Practices”

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- Standard format for each measure characterization, including:
 - ❑ Narrative explanation of measure
 - ❑ Base and measure case technical specifications
 - ❑ Energy and demand savings algorithms
 - ❑ Other key parameters (measure life, costs, etc.)
 - ❑ Pertinent implementation details (e.g. exclusions)
- All measure parameters clearly linked to measure
- Measure is well-documented and values are reproducible
 - ❑ Citations to primary sources, not other TRMs
 - ❑ Primary sources linked to or hosted by TRM
- Embedded calculators and look up tables
- Non-measure specific tools and information included as appendices
 - ❑ NY TRM has excellent descriptions of building prototypes

Content “Best Practices”

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- Written guidelines for addressing recurring technical issues
 - NW RTF and Mid-Atlantic state use process language
 - ✦ Use of reproducible methods, diligent review of all sources...
 - PA and IL use more specific data hierarchies
 - NW RTF has several guidelines on measure complexity, statistical significance, other
- Careful consideration of modeling vs. engineering equations vs. field data
 - No “one size fits all;” consider pros and cons of different approaches
- Key parameters (from modeling or engineering equations) should be validated with real data!
 - Field conditions and human behavior may alter forecasted savings
 - Collect data through implementation or early EM&V
 - Identify and implement use of AMI data (e.g. EnergySavvy) and other tools (DOE Building Performance Database)

Other Content Findings

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- Number of measures between 50-250
- Reduced references to DEER
 - EULs, operating hours, and measure costs are most cited parameters
 - ✦ Measure costs no longer in current DEER
- Interactive effects only for bonus in cooling reductions
 - Only other jurisdiction that clearly applies heating penalty is IL for dual-fuel utilities.

The Move to Electronic TRMs

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- Key benefits to be gained:
 - Improves documentation
 - ✦ Ability to embed tools and supporting documents
 - ✦ Enables more detailed revision histories
 - Reduces cost and increases efficiency of data management
 - ✦ Through APIs, automatic download of values into utility tracking and planning databases
 - Highly transparent workflow management for new and updated measures.
 - Keyword searchable
- Available tools include:
 - VEIC
 - Nexant iEnergy
 - Energy Platforms
 - Frontier

The Move to Electronic TRMs

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- Carefully consider desired functionality and overall data management needs before leaping forward with one solution
- Consult all stakeholders who use ex ante values for input on required form and function of “electronic TRM”
- Short Term Question:
 - ❑ Which commercially available product best meets desired functionality?
- Long Term Solution: “Open source” product that is integrated with other open source tools (such as EnergyPlus)?