

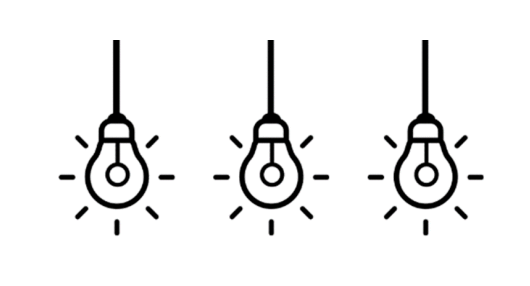


SPEER Industry Workshop: Texas Technical Reference Manual

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September 2023



**ELECTRIC UTILITY
MARKETING MANAGERS
OF TEXAS**



Who controls the TRM?

Why are TRMs updated each year?

- Federal and state codes & standards updates
- Efficiency standards updates (e.g., ENERGY STAR specifications)
- Incorporate evaluation/stakeholder feedback and recommendations
- Market adoption (e.g., lighting)
- Outdated references and assumptions
- Corrections and clarifications
- Documentation requirements
- New measures, applications, or building types

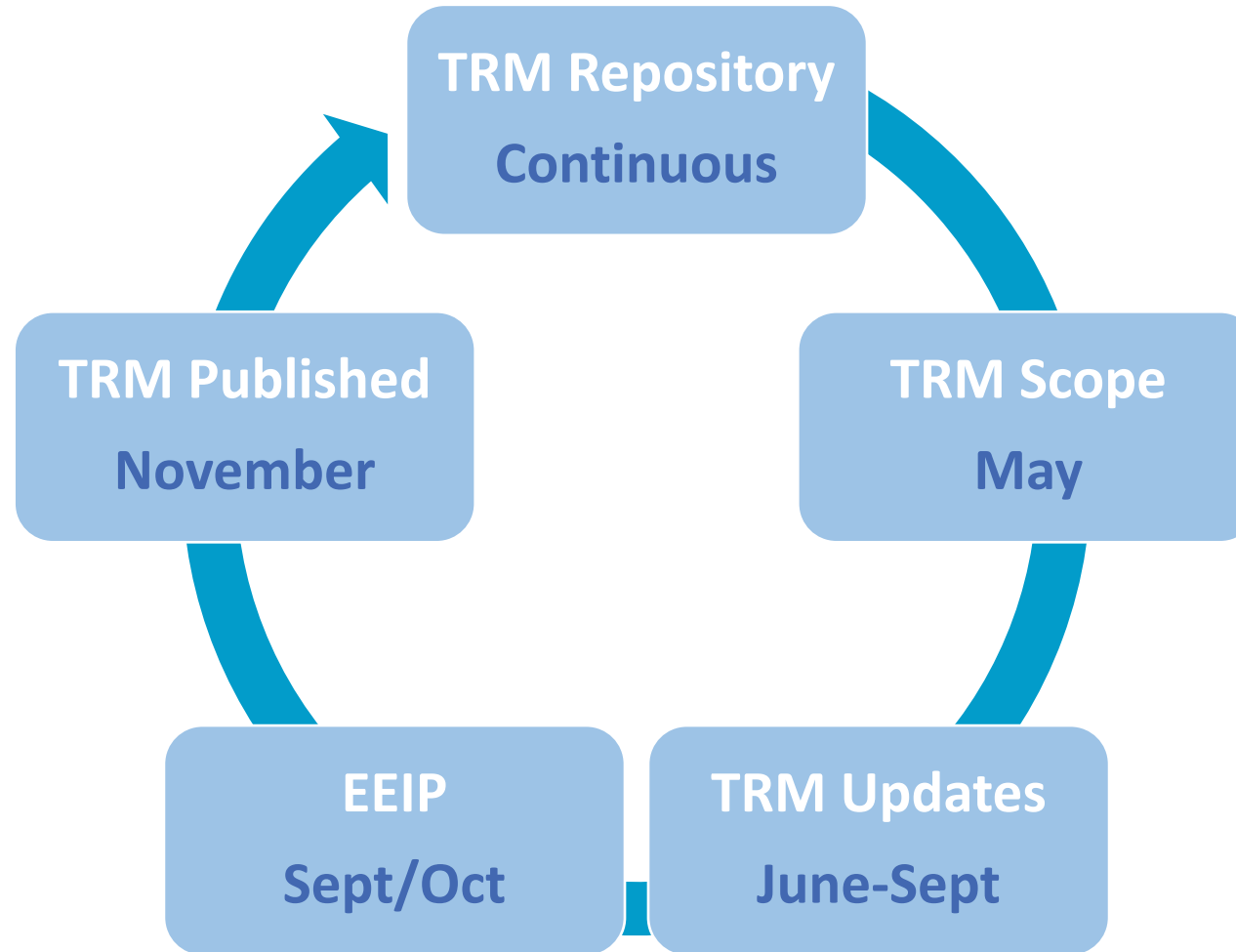




Possible paths for new measures

- Other state TRMs (with or without climate adjustment)
- Third party reference studies
- Standard engineering calculations
- Energy modeling
- Measurement & verification
- Utility pilot program

How are measures typically updated?





Typical impacts of TRM updates

PY 2024 TRM 11.0

Summary of Key Measure Updates



Vol 2 Residential

Note: This list is not comprehensive. A more complete list of measure updates will be presented at the **Fall EEIP meeting on September 26th**.

Lighting:

- All measures: added in-service rates specific to program delivery type

HVAC:

- 2.2.4 Central and Mini-Split AC/HPs
 - All systems must now comply with SEER2 standard
 - Removed 1-year exception for HPs
 - Added minimum efficiency standard referencing ENERGY STAR recommendations
 - Clarified simplified savings path for units not pursuing rightsizing savings

Vol 2 Residential

HVAC (continued):

- 2.2.5 Room ACs
 - Incorporated updated federal standard
 - Removed energy credit for units with connected functionality
- 2.2.10 Connected Thermostats
 - Moved to algorithm approach aligning with Central AC/HP measure
 - Updated HVAC efficiency assumptions to reflect SEER2 standard
- 2.2.11 Smart Thermostat Load Management (available for PY24 but not in TRM v11 update)
 - Expanded measure to include all Texas climate zones
 - Specified deemed summer demand savings for RES LM programs based on historical performance
 - M&V still available as a secondary option

Vol 2 Residential

Envelope:

- All major updates will be held until the completion of upcoming EM&V residential consumption analysis
- 2.2.9 Windows
 - Monitoring pending ENERGY STAR specification update, effective 10/23/23 but still under revision

DHW:

- All DHW: Incorporated updated ENERGY STAR specification
- 2.4.1 Tankless DHW
 - Addressed potential negative savings scenario for tankless DHW where federal standard-compliant UEF rating does not exceed electric storage baseline due to lack of ENERGY STAR category

Vol 2 Residential

DHW (continued):

- 2.4.2 HPWHs and 2.4.3 Solar DHW
 - Addressed addition of future early retirement baseline after upcoming federal standard update
- 2.4.4 Tank Insulation
 - Updated eligibility criteria to allow for tank insulation to be installed on water heaters installed between 1991-2015
 - Updated baseline to align with current federal standard to award savings for post-1991 systems

Vol 2 Residential

Appliances:

- 2.5.8 Air Purifiers
 - Incorporated updated federal standard
- 2.5.9 Pool Pumps
 - Extended new construction eligibility for pumps installed as of July 2021
 - Updated baseline and efficiency case to differentiate between inground/above ground pool pumps
- 2.5.10 Advanced Power Strips
 - Added in-service rates specific to program delivery type
 - Eliminated savings paths for specific peripheral devices in favor of focusing measure on deemed home office and entertainment configurations

Vol 3 Non-Residential

General:

- Aligned building type descriptions across all non-residential measures to simplify building type selection

Lighting:

- 2.1.1 Lamps and Fixtures
 - Clarified eligibility path for DLC delisted products
- 2.1.2 Lighting Controls
 - Added networked lighting controls category for systems using software control based on the outputs of sensor equipment

Vol 3 Non-Residential

HVAC:

- 2.2.1 AC/HP Tune-ups
 - Extended eligibility to PTAC/PTHPs
- 2.2.2 Split & Packaged AC/HPs
 - All < 65,000 btuh systems must now comply with SEER2 standard
 - Removed 1-year exception for HPs
 - Incorporated updated federal standard for 65,000-720,000 btuh systems (affecting IEER and COP)
 - Extended rightsizing allowance to replace-on-burnout applications
- 2.2.7 HVAC VFDs
 - Added savings for condenser water pumps and cooling tower fans

Vol 3 Non-Residential

Envelope:

- 2.3.2 Window Treatments
 - Added baseline condition for windows with existing louvered blinds

Food Service:

- Minor clarifications and cleanup

Refrigeration:

- 2.5.6 Solid and Glass Door Reach-ins
 - Incorporated updated ENERGY STAR specification
 - Added savings for horizontal reach-in refrigerators and freezers

Vol 3 Non-Residential

DHW & Miscellaneous:

- No revisions other than new measures

New Measures:

- Residential
 - Envelope: Duct Insulation
- Non-residential
 - Food Service: Griddles
 - DHW: Heat Pump Water Heaters
 - Miscellaneous: Forklift chargers, Uninterruptible Power Supplies, Theater Projector Lasers

Vol 4 M&V Protocols

HVAC:

- 2.1.1 AC/HP Tune-ups
 - Comprehensive review of savings methodology, efficiency loss factors, equipment stratification, and documentation requirements
- 2.1.3 Variable Refrigerant Flow (VRF)
 - Updated baseline from VRF federal standard to reference Volume 3 DX HVAC baseline
 - Incorporated updated VRF federal standard as efficiency standard

Vol 4 M&V Protocols

Miscellaneous:

- 2.5.3 Non-Residential M&V
 - Existing measure broken out into separate measure applications for traditional M&V and custom engineering calculations
- 2.5.4 Thermal Energy Storage
 - Broadened measure application to additional energy storage options, such as batteries
 - Peak savings measure only

All other sections:

- Minor clarifications and cleanup

Heat Pump Working Group



HP Working Group

TRM v10 SPEER recommendation:

- Consider new definitions to include variable speed heat pump systems. New variable speed heat pump system definitions will allow utilities to capture savings from reduced capacity throughout the year for these systems and may provide for stronger incentives for higher performing technology to be installed.

Previous TRM v10 updates for PY 2023:

- Reduced full-load efficiency baseline for system with high part-load efficiency ratings (15.2+ SEER2)
- Specified additional system types for program tracking data requirements to identify variable speed equipment and compare to utility meter data

Paths to deemed savings:

- Adjust coefficients used in current savings methodology, other state TRMs, third-party study, M&V, or utility billing analysis

HP Working Group

Current and future activities:

- Organizing HP working group (next steps will be announced through EEIP)
- Leverage upcoming 2023 evaluation to explore increased savings opportunities
- Developing data collection memo outlining potential research study
- Engaging manufacturers and stakeholders to identify opportunities for data sharing
- Exploring utility pilots and other probationary savings opportunities
- PUC rulemaking stakeholder working group key considerations:
 - Expanded pilot period
 - Claiming combination of summer and winter peak
 - Flex cost-effectiveness to sector level rather than program level
- Goal is to yield actionable results that could be implemented upon availability



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TRM updates are shared via the Texas PUC Energy Efficiency Implementation Project (EEIP) Listserv. Sign up for updates [here](#).

Once published, the Texas TRM will be available at Texasefficiency.com under Regulatory Filings > Deemed Savings