



# Texas Technical Reference Manual

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September 2022

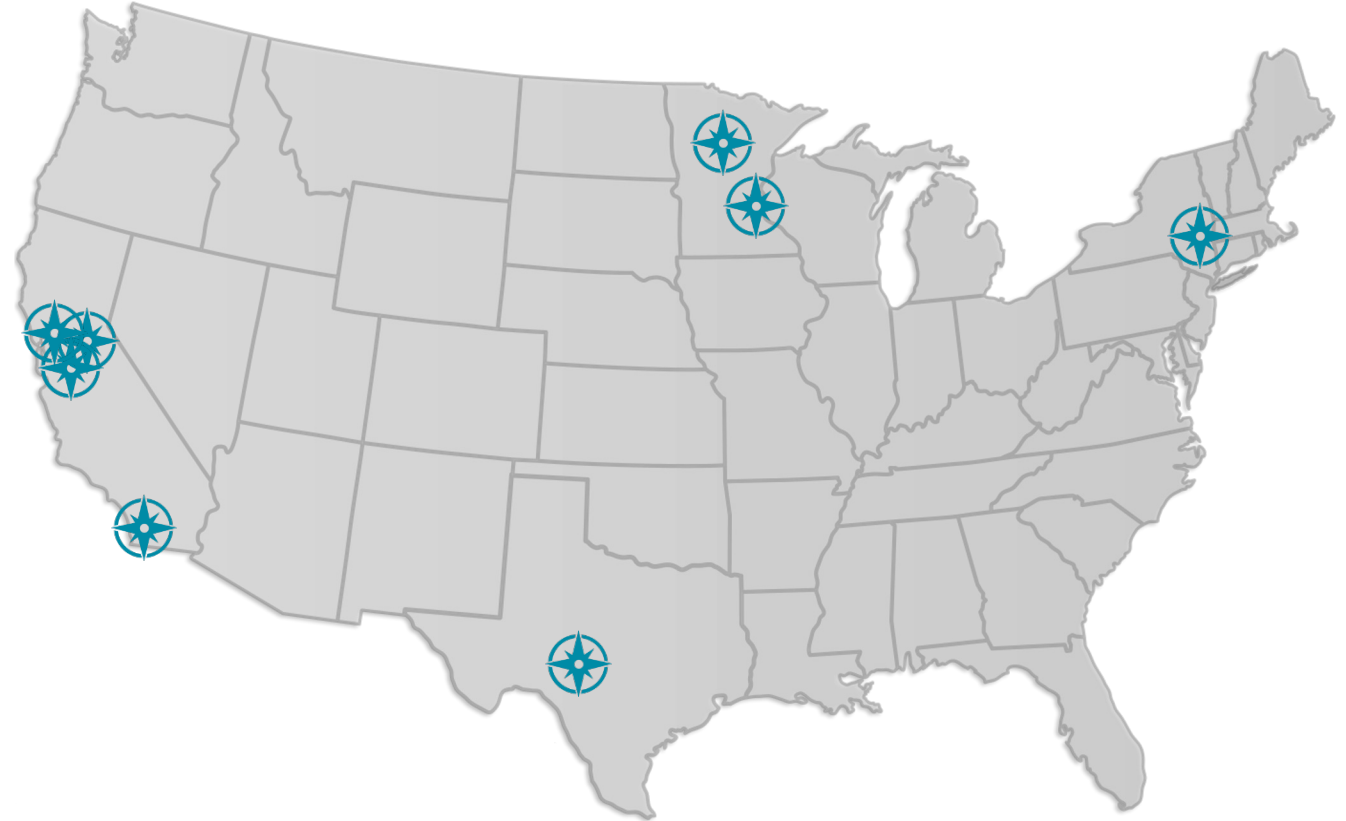
# Frontier Energy

- **National footprint**

- 140+ employees
- Offices in TX, CA, MN, NY

- **Our capabilities**

- Energy engineering
- Electric transportation
- Energy efficiency/DSM programs
- Advanced power generation
- Foodservice energy & water
- Cloud-based software



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# What is a TRM?

## Technical Reference Manual

*“...purpose [is to] provide a single common reference document to estimate energy and peak demand savings resulting from the installation of energy efficiency measures”*

## Deemed Savings Calculation

*“An industry-wide engineering algorithm used to calculate energy and/or demand savings of the installed energy efficiency measure that has been developed from common practice that is widely considered acceptable for the measure and purpose, and is applicable to the situation being evaluated.”*

## Public Utility Commission of Texas

**Texas Technical Reference Manual**

**Version 9.0**

**Volume 1: Overview and User Guide**

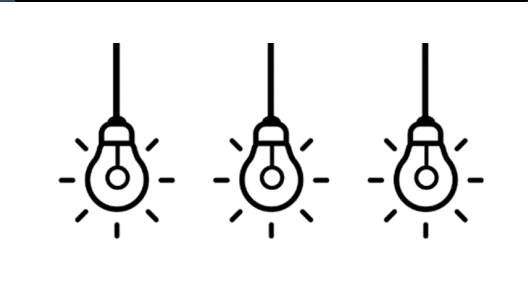
**Program Year 2022**

**Last Revision Date:**

**November 2021**

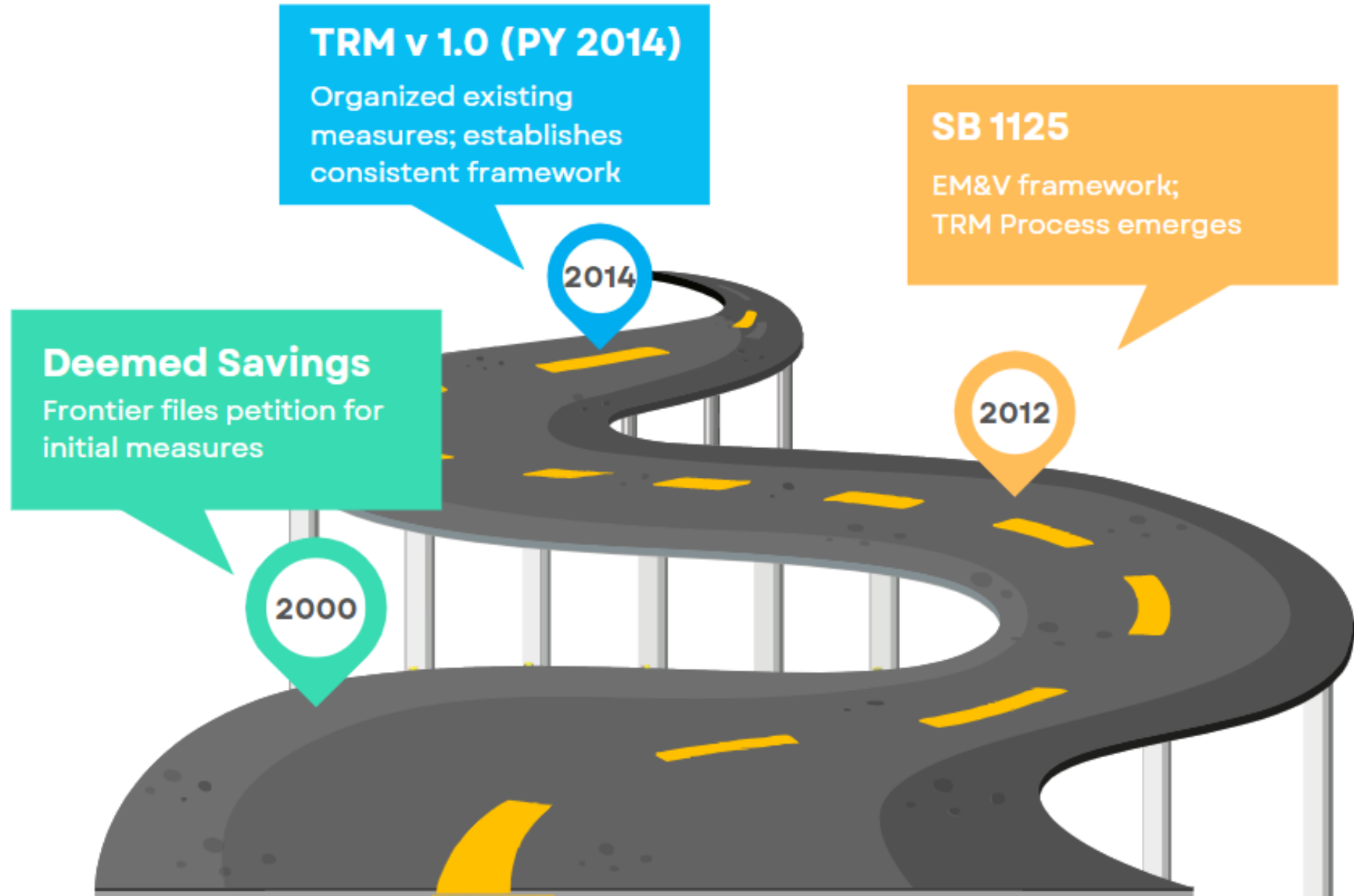


- Eligibility Criteria
- Baseline & High-efficiency Condition
- Savings Methodology (algorithms/inputs; tables)
- Estimated Useful Life (EUL)
- Tracking Data & Evaluation Requirements



# Who controls the TRM?

# Texas Deemed Savings → Technical Reference Manual



# Annual TRM Updates: Why & How It Changes

## Identify Updates → TRM Tracker

- PUC/EM&V team priorities
- Baselines (federal standards and codes)
- Efficiency case (Energy Star, etc.)
- Lessons from implementation experience

## Types of Changes

- Savings Impacts (algorithms, modeling, reference studies)
- Eligibility criteria
- Documentation requirements
- New measures

# TRM Evolution

**TRM v 1-2**

Organization;  
clarification; citations

**PY 2014 - 15**

**TRM v 3.0**

Summer/winter kW; 1st TRM  
add EM&V protocols

**PY 2016**

**TRM v 4 - 7**

Peak compliance;  
modeling updates; new  
measures

**PY 2017 - 20**

**TRM v 8.0**

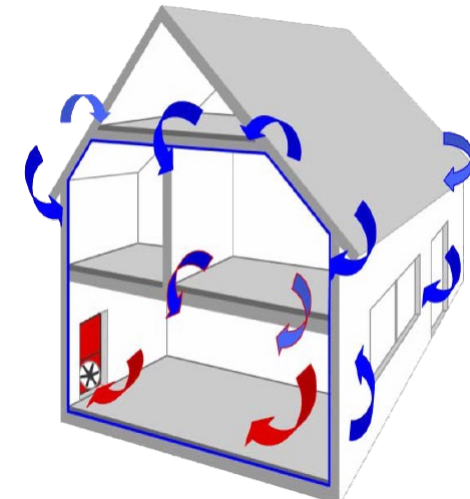
Consumption Analysis  
Impacts

**PY 2021**

**TRM v 9.0**

Comprehensive EUL  
and reference review

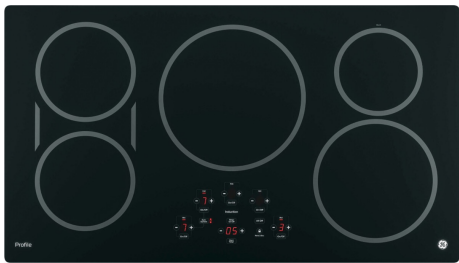
**PY 2022**





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# New TRM Measures



# TRMs of the Future...



New savings opportunities for existing measures

- Additional building types
- Newer technology
- Etc...



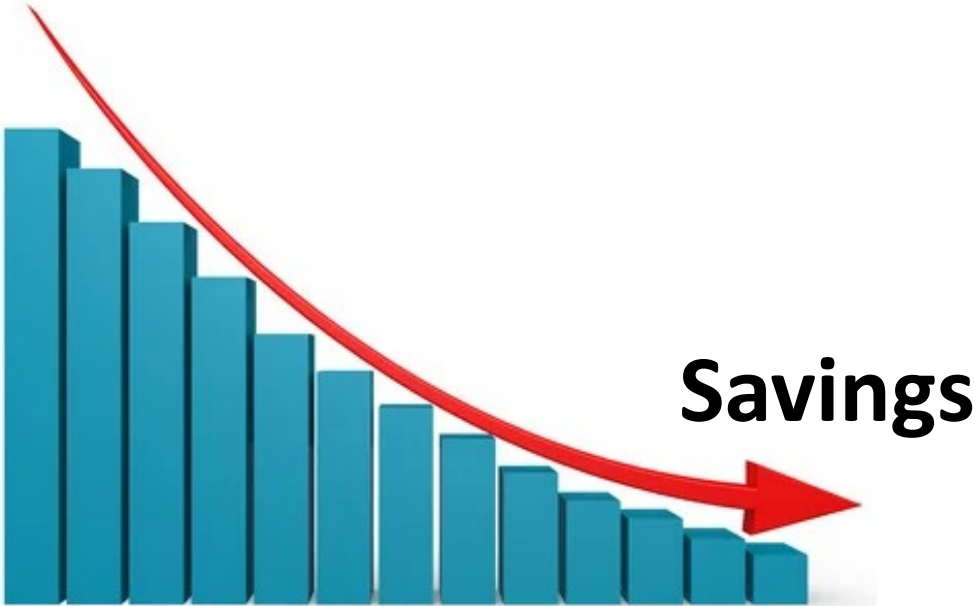
# Ex: Multi-Stage/Variable Speed Heat Pumps



## Data Gathering Mode

- Likely provides additional savings
- Need data to evaluate first
- Documentation Requirements -  
Tracking installations

# Challenges (Utilities & Contractors)





Balancing Act:  
TRM Savings,  
Cost-effectiveness,  
Participation

# TRM Update Process & Schedule

TRM 10.0 (PY 2023)	Date 2022
EEIP spring	March 8
TRM working group initiates	May 9
EUMMOT meeting	June TBD
EUMMOT finalize scope	June 13
TRM working group starts updating TRM	July 11
Submit redlines to EUMMOT	Sept 19
Send redlines to PUCT	Sept 19
EEIP fall	Oct TBD
Feedback from EUMMOT	Oct 17
Feedback from EEIP	Oct 17
Finalize and send to PUCT	Nov 1
PUCT publishes	Nov 8
Final	Dec 16



Thank you!

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