

Public Utility Commission of Texas

Third-party Evaluation, Monitoring & Verification
(EM&V) Contractor for the Texas Utilities' Energy
Efficiency and Load Management Portfolios

April 13, 2015



Texas has a long history of DSM

- First state to establish long-term DSM goals for regulated utilities in 1999
- Set savings targets at 10% of demand growth in 2003
- Increased goals in subsequent years
 - 20% of demand growth in 2010
 - 25% of demand growth in 2012
 - 30% of demand growth in 2013
 - 0.4% of peak demand once trigger is reached
- Cost-effectiveness based on Program Administration Cost Test
 - low-income exception, Savings to Investment Ratio

Key Players in Texas



Public Utility Commission of Texas

AEP Texas Central

AEP Texas North

CenterPoint Energy

El Paso Electric Co.

Entergy Texas

Oncor

Southwestern Electric Power Company

Texas-New Mexico Power

Xcel Energy

Sharyland

Other stakeholders including ERCOT, EUMMOT Energy Efficiency Service Providers, implementation contractors, consumer advocates

Delivering DSM to Customers

- **All sectors served**
- Commercial
- Residential
- Low-income – required minimums

*Utilities recover costs
under the Energy
Efficiency Cost
Recovery Factor Rider*

- **Through a variety of program types**
 - Standard Offer Programs
 - Market Transformation Programs
 - Self-delivered Programs
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- **Mixed administration**
 - Contracted implementation firms
 - In-house utility administration

Introduction of EM&V

- Texas enacted SB 1125 in 2011
 - established the requirement for an EM&V framework
 - Rulemaking followed
 - Commission Energy Efficiency Rule 25.181
- PUCT worked with utilities and other stakeholders through the statewide collaborative group, Energy Efficiency Implementation Project, to craft EM&V scope of work

EM&V Scope

PUCT, utilities and the EM&V contractor began to build infrastructure to meet the following goals:

- Verify gross energy and demand savings for over 130 programs across 10 utilities
 - Estimate net savings
 - Determine program and portfolio cost-effectiveness
 - Provide feedback to the PUCT, utilities, and other stakeholders
 - Prepare and maintain a statewide Technical Reference Manual (TRM)
 - Provide ongoing support for M&V plans, savings calculation tools, deemed savings petitions and TRM
- Target level of precision: +/- 90% at the *utility portfolio level*.

EM&V Approach

- Approach to EM&V is to:
 - Establish statewide best practices evaluation infrastructure
 - Anchor the EM&V process in collaboration and clear communication with key stakeholders
 - Increase accuracy of impacts while fostering confidence in the results
 - Provide information that will serve as a valuable tool to improve program performance
 - Appropriately balance costs with the value of the information provided

Key Successes: Realized Savings and Improvements

- Cost-effective portfolios
- Overall high realization rates
- Generally high attribution
- Responsiveness to EM&V recommendations has resulted in improved:
 - Documentation and tracking system quality
 - Savings estimates and consistency across utilities
 - Load management
 - Peak demand definitions
 - Energy efficiency measures
 - Transparency of savings calculations and approaches
 - First centralized source of all deemed savings values
 - incorporation of M&V protocols with TRM 3.0



PY2013 EM&V Methodology

- Second program year evaluated as part of the statewide EM&V effort
- Program tracking system reviews across all utility programs and desk reviews, customer and market actor surveys, and on-site M&V for sampled projects.
 - 2,806 desk reviews
 - 596 on-site M&V
 - 888 customer surveys
 - 284 market actor surveys



PY2013 Key Findings

- Statewide evaluated savings are higher than claimed savings
 - Statewide demand savings realization rate is 110%
 - Utility realization rates ranged from 90.0% to 138.3%
 - Statewide energy savings realization rate is 108%
 - Utility realization rates ranged from 94.3% to 120.8%
- Residential programs are primary driver of the difference
 - new deemed savings values approved by the PUCT in 2013
 - although all utilities saw some adjustments, one of the large utility's increase in evaluated savings drove the statewide results upward.

Utility Portfolio Claimed and Evaluated Demand Savings

Utility	Percent Statewide Savings (kW)	2013 Claimed Demand Savings (kW)	2013 Evaluated Demand Savings (kW)	Realization Rate (kW)	Precision at 90% Confidence	Program Documentation Score
AEP TCC	8.3%	34,136	34,819	102.0%	4.2%	Good
AEP TNC	1.7%	6,932	6,641	95.8%	5.7%	Good
CenterPoint	46.9%	193,843	193,144	99.6%	1.4%	Good
El Paso Electric	3.4%	14,232	14,831	104.2%	2.4%	Good
Entergy	4.6%	19,141	17,489	91.4%	3.2%	Limited
Oncor	27.3%	112,734	155,940	138.3%	3.8%	Good
Sharyland	0.6%	2,668	2,702	101.3%	2.7%	Good
SWEPCO	3.4%	14,066	13,542	96.3%	4.3%	Good
TNMP	2.5%	10,295	9,787	95.1%	3.9%	Good
Xcel SPS	1.2%	5,105	4,594	90.0%	4.9%	Fair
Total	100%	413,154	453,489	109.8%	1.5%	Good

Utility Portfolio Claimed and Evaluated Energy Savings

Utility	Percent Statewide Savings (kWh)	2013 Claimed Energy Savings (kWh)	2013 Evaluated Energy Savings (kWh)	Realization Rate (kWh)	Precision at 90% Confidence	Program Doc Score
AEP TCC	9.1%	48,954,289	56,844,575	116.1%	9.7%	Fair
AEP TNC	1.7%	9,086,796	9,057,235	99.7%	14.1%	Fair
CenterPoint	27.6%	148,039,736	146,766,780	99.1%	8.4%	Good
El Paso Electric	4.5%	23,958,806	25,192,197	105.1%	1.9%	Fair
Entergy	6.9%	36,995,919	40,816,738	110.3%	4.3%	Limited
Oncor	41.9%	224,666,448	251,316,469	111.9%	4.8%	Good
Sharyland	0.2%	1,007,593	1,217,332	120.8%	26.4%	Good
SWEPCO	3.5%	18,774,990	17,750,039	94.5%	15.9%	Fair
TNMP	3.2%	16,980,658	19,079,798	112.4%	9.0%	Good
Xcel SPS	1.5%	7,950,196	8,982,352	113.0%	15.1%	Limited
Total	100%	536,415,431	577,023,515	107.6%	3.2%	Good

PY2013 Cost Effectiveness

- Statewide programs delivered savings for \$0.016 per kWh and \$12.77 per kW
- Overall cost-effectiveness
 - 3.43 including low-income programs
 - 3.81 excluding low-income programs
- Programs still cost-effective when based on net savings
 - 2.89 including low-income programs
 - 3.20 excluding low-income programs.
- Utilities' cost-effectiveness varied
 - 2.99 to 4.65 based on evaluated savings results (3.27 to 5.28 excluding low-income programs)
 - 2.50 to 3.86 based on evaluated net savings results (2.84 to 4.35 based on evaluated net savings)

Sector Cost Effectiveness

- Commercial and residential sector energy efficiency programs are the most cost-effective and are similar

	Average CE	Low Range	High Range
Commercial evaluated savings	4.13	3.41	6.52
Commercial net evaluated savings	3.49	2.87	5.37
Residential evaluated savings	4.22	2.98	7.40
Residential net evaluated savings	3.48	2.69	6.36

Program Type Cost Effectiveness

- Low-income programs had the lowest non-pilot program cost-effectiveness results statewide at 1.29
- Load management programs are next lowest at 1.33
- Pilots statewide results is 1.45, 1.3 based on net savings

Thank you for your time today. Hope to see you in the break-out session!

For additional questions:

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