Public Utility Commission of Texas


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

- **Through a variety of program types**
  - Standard Offer Programs
  - Market Transformation Programs
  - Self-delivered Programs

- **Mixed administration**
  - Contracted implementation firms
  - In-house utility administration

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

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

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

<table>
<thead>
<tr>
<th></th>
<th>Average CE</th>
<th>Low Range</th>
<th>High Range</th>
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</thead>
<tbody>
<tr>
<td>Commercial evaluated</td>
<td>4.13</td>
<td>3.41</td>
<td>6.52</td>
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<tr>
<td>savings</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Commercial net</td>
<td>3.49</td>
<td>2.87</td>
<td>5.37</td>
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<tr>
<td>evaluated savings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential evaluated</td>
<td>4.22</td>
<td>2.98</td>
<td>7.40</td>
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<tr>
<td>savings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential net</td>
<td>3.48</td>
<td>2.69</td>
<td>6.36</td>
</tr>
<tr>
<td>evaluated savings</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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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