Southwest Energy Efficiency Workshop

Presentation by:
Daniel Hogan
Supervisor Residential Programs
Demand Side Resources
Overview

• Regulatory outcomes
• Spending and savings
• Experiences and Lessons Learned
Rate Case (July 1st)

- Programs
  - Continued all existing programs
  - New Programs were not approved

- Recovery of fixed costs
  - The ACC approved a Lost Fixed Cost Recovery Mechanism (LFCR)
    (TEP will recover a portion of the fixed costs for each kWh measured under an EE program)

- Performance Incentive (PI)
  Calculated at 8% of net benefits capped at $0.0125 per kWh saved

- Commission opened Generic EE docket on all things EE
## 2013 TEP Budgets by Program

<table>
<thead>
<tr>
<th>Residential Programs</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-Income Weatherization</td>
<td>$516,451</td>
</tr>
<tr>
<td>Residential New Construction</td>
<td>$2,894,514</td>
</tr>
<tr>
<td>Shade Tree Program</td>
<td>$242,791</td>
</tr>
<tr>
<td>ENERGY STAR® Lighting (CFL)</td>
<td>$2,054,660</td>
</tr>
<tr>
<td>Existing Home Program</td>
<td>$2,601,812</td>
</tr>
<tr>
<td>Res. &amp; Small Business DLC</td>
<td>$92,408</td>
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<tr>
<td><strong>Residential Subtotal</strong></td>
<td><strong>$8,402,636</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Non-Residential Programs</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Non-Residential Existing Facilities</td>
<td>$3,299,435</td>
</tr>
<tr>
<td>Small Business</td>
<td>$2,617,049</td>
</tr>
<tr>
<td>Efficient Commercial Building Design</td>
<td>$615,160</td>
</tr>
<tr>
<td>C&amp;I Demand Response - Direct Load Control</td>
<td>$2,738,350</td>
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<tr>
<td><strong>Non-Residential Subtotal</strong></td>
<td><strong>$9,269,993</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Support Programs</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Home Energy Reports</td>
<td>$527,968</td>
</tr>
<tr>
<td>Consumer Education &amp; Outreach</td>
<td>$384,500</td>
</tr>
<tr>
<td><strong>Support Programs Subtotal</strong></td>
<td><strong>$912,468</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Program Totals</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Program Totals</td>
<td>$18,585,097</td>
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<table>
<thead>
<tr>
<th>Program Development, Analysis &amp; Reporting Software</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td><strong>$19,234,242</strong></td>
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</table>
## 2013 Q1-Q3 Savings at Overall Portfolio

<table>
<thead>
<tr>
<th>Utility</th>
<th>Coincident Demand Savings (MW)</th>
<th>Annual Energy Savings (MWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEP</td>
<td>5.56</td>
<td>63,319</td>
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</table>
# 2013 TEP YTD EE Savings

<table>
<thead>
<tr>
<th>AT GENERATOR</th>
<th>Annual Coincident Demand Savings (MW)</th>
<th>Annual Energy Savings (MWh)</th>
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</thead>
<tbody>
<tr>
<td>Program</td>
<td>Verified</td>
<td>Verified</td>
</tr>
<tr>
<td>C&amp;I Comprehensive</td>
<td>2.08</td>
<td>14,321</td>
</tr>
<tr>
<td>Commercial New Construction</td>
<td>0.10</td>
<td>202</td>
</tr>
<tr>
<td>Small Business</td>
<td>0.20</td>
<td>2,871</td>
</tr>
<tr>
<td>Commercial Subtotal</td>
<td>2.38</td>
<td>17,394</td>
</tr>
<tr>
<td>ENERGY STAR Lighting</td>
<td>1.53</td>
<td>37,869</td>
</tr>
<tr>
<td>Existing Homes &amp; Audit Direct-Install</td>
<td>0.47</td>
<td>585</td>
</tr>
<tr>
<td>Residential New Construction</td>
<td>0.07</td>
<td>103.53</td>
</tr>
<tr>
<td>Low-Income Weatherization</td>
<td>0.004</td>
<td>103</td>
</tr>
<tr>
<td>Shade Trees</td>
<td>0.06</td>
<td>141</td>
</tr>
<tr>
<td>Education &amp; Outreach - Kits</td>
<td>0.03</td>
<td>855</td>
</tr>
<tr>
<td>Home Energy Reports</td>
<td>1.01</td>
<td>6,268</td>
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<tr>
<td>Residential &amp; Behavioral Subtotal</td>
<td>3.18</td>
<td>45,925</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>5.56</strong></td>
<td><strong>63,319</strong></td>
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# TEP Implementation Contractors

<table>
<thead>
<tr>
<th>Program</th>
<th>Implementation Contractor</th>
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<tbody>
<tr>
<td>C&amp;I Comprehensive</td>
<td>KEMA Services, Inc.</td>
</tr>
<tr>
<td>Commercial New Construction</td>
<td>KEMA Services, Inc.</td>
</tr>
<tr>
<td>Small Business</td>
<td>KEMA Services, Inc.</td>
</tr>
<tr>
<td>C&amp;I Direct Load Control</td>
<td>EnerNOC</td>
</tr>
<tr>
<td>ENERGY STAR Lighting</td>
<td>ECOVA</td>
</tr>
<tr>
<td>Existing Homes &amp; Audit Direct-Install</td>
<td>Conservation Services Group</td>
</tr>
<tr>
<td>Low-Income Weatherization</td>
<td>Pima County, Tucson Urban League</td>
</tr>
<tr>
<td>Residential New Construction</td>
<td>Internal</td>
</tr>
<tr>
<td>Shade Trees</td>
<td>Trees for Tucson</td>
</tr>
<tr>
<td>Education &amp; Outreach - Kits</td>
<td>Environmental Education Exchange</td>
</tr>
<tr>
<td>Home Energy Reports</td>
<td>Opower</td>
</tr>
</tbody>
</table>
Residential New Home Construction

Program Overview

• **Target Market**
  – Builders committed to designing and constructing higher quality more energy efficient homes

• **Program Rationale and/or Objective**
  – Most cost effective time to install energy efficient measures is at the time of construction

• **Products and Services Provided**
  – A home aligned with the Energy Star Standards
  – Lower ownership cost

• **Delivery Strategy and Administration**
  – In-house delivery administration for TEP
Tucson Housing Market critical to local economy

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</tr>
</thead>
<tbody>
<tr>
<td>Permits</td>
<td>197</td>
<td>211</td>
<td>-6.6%</td>
<td>1,935</td>
<td>1,748</td>
<td>10.7%</td>
<td>2,322</td>
<td>2,450</td>
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<tr>
<td>New Home Closings</td>
<td>155</td>
<td>140</td>
<td>10.7%</td>
<td>1,557</td>
<td>1,235</td>
<td>26.1%</td>
<td>1,868</td>
<td>1,900</td>
</tr>
<tr>
<td>Resales (Total)</td>
<td>1,155</td>
<td>1,100</td>
<td>5.0%</td>
<td>12,371</td>
<td>12,267</td>
<td>0.8%</td>
<td>14,845</td>
<td>n/a</td>
</tr>
<tr>
<td>Traditional</td>
<td>923</td>
<td>831</td>
<td>11.1%</td>
<td>9,601</td>
<td>8,857</td>
<td>8.4%</td>
<td>11,521</td>
<td>n/a</td>
</tr>
<tr>
<td>Foreclosures</td>
<td>232</td>
<td>269</td>
<td>-13.8%</td>
<td>2,770</td>
<td>3,410</td>
<td>-18.8%</td>
<td>3,324</td>
<td>n/a</td>
</tr>
</tbody>
</table>
Shade Trees

Trees for Tucson was started in 1989 to encourage and facilitate desert-adapted tree planting in the Tucson metro area.

Program Overview

- **Target Market**
  - Homes in the utility’s service territory

- **Program Rationale and/or Objective**
  - The program is designed to reduce energy consumption and encourage conservation through planting trees

- **Products and Services Provided**
  - Desert-adaptive trees to be planted on the east, west, or south side homes

- **Delivery Strategy and Administration**
  - TEP Partners with Tucson Clean & Beautiful to provide trees at a reduced price
Low Income Weatherization

Program Overview

• **Target Market**
  – Low income customer homes at 200% of Federal Poverty Line

• **Program Rationale and/or Objective**
  – Helps low income customers lower their average household energy consumption to help lower their utility bills

• **Products and Services Provided**
  – Effective measures provided include duct repair, pressure management, attic insulation, and repair/replacement of non-functional or hazardous appliances

• **Delivery Strategy and Administration**
  – The appropriate agency will install cost effective measures at no cost to customers who qualify
Residential Lighting

Program Overview

• **Target Market**
  – Customers looking to purchase energy efficient lighting products at a discounted price

• **Program Rationale and/or Objective**
  – To offer residential customers additional opportunities to reduce their energy consumption and further the market transformation process through retail partnerships, training of retail staff, and increased stocking and selection of efficient lighting products

• **Products and Services Provided**
  – CFLs are currently offered at a buy-down rate

• **Delivery Strategy and Administration**
  – TEP partners with local retailers and lighting manufacturers to bring customers discount pricing on energy efficient lighting through in-store buy-down promotions
Efficient Home Program

A program designed to improve the safety, comfort, and energy efficiency of your house.

Program Overview

• Target Market
  – Existing homes in need of AC replacement.

• Program Objective
  – Incent the quality installation of energy star rated AC units and supporting energy efficiency improvements.

• Products and/or Services Provided
  – Incentives for AC replacement $500-$1,000
  – Incentive for duct sealing up to $450
  – Incentive for Air Sealing up to $250
  – Incentive for air sealing plus insulation up to $800
  – Incentive for window screens & tinting up to $250

• Delivery Strategy and Administration
  – Customers are required to work with an Efficient Home Program contractor to install energy efficient measures. The Contractor credits the incentive to the customer, submits completed program application to TEP, and is reimbursed by TEP.
Program Overview

• **Target Market**
  – Middle School Students/Classrooms

• **Program Rationale and /or Objective**
  – To provide students with education on energy efficiency concepts that they can share with their families to be implemented in their homes.

• **Products and Services Provided**
  – Take home energy efficiency kits

• **Delivery Strategy and Administration**
  – The Environmental Education Exchange, a nationally recognized Tucson based organization, currently implements the Bright Students Program
Home Energy Reports

Program Overview

• **Target Market**
  – Residential customers that have higher than average use

• **Program Rationale and/or Objective**
  – To influence behavioral change in customers to reduce their energy consumption through targeted and comparative education and awareness of their energy consumption compared to others.

• **Products and/or Services Provided**
  – Direct mail reports on energy consumption and tips on how to save energy, at no cost to the customer.

• **Delivery Strategy and Administration**
  – An implementation contractor (OPower) will deliver the program with responsibility for customer selection, report generation, energy tips, savings quantification and customer communications
Program Overview

• Target Market
  – Residential customers in the TEP service area

• Program Rationale and/or Objective
  – To provide customers with more information to allow them to better understand and manage their energy usage and help them lower their energy bills.

• Products and/or Services Provided
  – Customers receive timely information on their energy use via a web portal or in-home display. This helps customers stick to an energy budget or achieve conservation goals they may set.

• Delivery Strategy and Administration
  – Delivery of the program will be made through a third party implementation contractor (Tendril) and TEP resources.
Program Overview

• Target Market
  – Large Businesses operating on TEP rates 10, 13, 14 or 40

• Program Rationale and/or Objective
  – To help businesses reduce the initial purchase cost of energy-efficient equipment

• Products and/or Services Provided
  – Large commercial customers are offered incentives to install energy efficient equipment/measures at their facilities.
  – Equipment/Measures currently include: lighting equipment and controls, air conditioning and heat pump equipment ("HVAC"), motors, air compressors, refrigeration equipment, and custom-efficiency measures.

• Delivery Strategy and Administration
  – The program is delivered by a third party implementation contractor (KEMA) who provides program administration, application review, participation tracking and reporting, project quality control, and technical support.
Small Business

Program Overview

• **Target Market**
  – Small Commercial businesses on Rate 10 schedule

• **Program Rationale and/or Objective**
  – To encourage small commercial customers to upgrade existing equipment to more energy efficient equipment.

• **Products and/or Services Provided**
  – The program offers incentives for the installation of energy efficiency measures including lighting equipment and controls, HVAC equipment, motors and motor drives, compressed air and refrigeration measures.

• **Delivery Strategy and Administration**
  – The program is delivered by a third party implementation contractor (KEMA) who provides program administration, application review, participation tracking and reporting, project quality control, and technical support.
New Construction

Program Overview

• **Target Market**
  – Non-residential customers who will be constructing new facilities.

• **Program Rationale and/or Objective**
  – To assist customers in designing and constructing energy efficient buildings.

• **Products and/or Services Provided**
  – This program has two parts, Design Assistance and Building Performance.
    - In Design Assistance: rebates are available for customers to help offset the costs associated with having a design team create an energy efficient building design instead of a standard building design.
    - In Building Performance: Rebates are available for integrating energy efficient measures into the construction of a building.

• **Delivery Strategy and Administration**
  – The program is delivered by a third party implementation contractor (KEMA) who provides program administration, application review, participation tracking and reporting, project quality control, and technical support.
The TEP DemandSMART Program is a simple smart way to put money back into businesses with zero up front costs.

Program Overview

- **Target Market**
  - Commercial, institutional, and industrial organizations.

- **Program Rationale and/or Objective**
  - To help businesses control their energy use and allow them to voluntarily reduce their electricity consumption during times of peak electricity demand or high wholesale electricity prices.

- **Products and/or Services Provided**
  - The program provides businesses on-demand access to their energy data, giving businesses the information they need to perform their best during demand response events and to better manage overall energy costs.

- **Delivery Strategy and Administration**
  - The program will be delivered on a turn-key basis by a third-party implementation contractor (EnerNoc), who will negotiate load reduction agreements with multiple customers and “aggregate” these customers to provide TEP a confirmed and guaranteed load reduction capacity available upon request.
Customer Intelligence

• Residential
  – Segment TEP/UNS customer data
    • Demographics
    • Psychographics
    • Energy lifestyle, usage and program enrollment

• Commercial
  – Segment TEP/UNS customer data
    • Industrial classification
    • Business traits
    • Energy usage and program enrollment
Girl Scout Cookies & CFLs

• *Cookies and a CFL – from a local Girl Scout.* Y
• This year the Tucson Electric Utilities program partnered with the Girl Scouts to distribute complimentary ENERGY STAR qualified CFL bulbs to customers who purchased a box (or more) of their famous cookies.
• The scouts distributed 100,000 CFLs during their annual cookie sale

• https://www.youtube.com/watch?v=0mLZJMjAYPo#t=78
Experiences & Lessons Learned

- Program continuity is the biggest lesson learned
- Face to face sales is a necessity
- Relationship building with key customers plays a big role in success
- Need to have diversity across contractor and trade ally base. Do not count on a limited number of companies for success.
- Customer participation is increasing
- Must be able to quickly react to changing situations