Low Income
Extreme Energy
Makeover
TVA Smart Communities

Extreme Energy Makeover (EEM)

- Project developed to target low income homes/communities
- $43 million over 3 years (part of TVA/EPA settlement to invest in energy efficiency programs benefitting customers of the Tennessee Valley)
- Projects encouraged community partnerships to meet energy needs of low income communities
- All upgrades were paid by TVA through contract awards to seven project teams
- All recipients of upgrades were income qualified
- Overwhelming positive response from community, local power companies (LPC), and participants
- Identified a need for low income energy outreach/programs within the Valley
- **EEM Project is ending in September 2017**
# TVA Smart Communities

## Extreme Energy Makeover (EEM) Teams

<table>
<thead>
<tr>
<th>Project Team</th>
<th>LPC</th>
<th>Project Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knoxville Extreme Energy Makeover</td>
<td>Knoxville Utilities Board</td>
<td>Knoxville-Knox County Community Action Committee City of Knoxville Alliance to Save Energy Other Non-Profit Partners</td>
</tr>
<tr>
<td>Huntsville Extreme Energy Makeover</td>
<td>Huntsville Utilities</td>
<td>City of Huntsville Huntsville Housing Authority Other Non-Profit Partners</td>
</tr>
<tr>
<td>Impact Cleveland Extreme Energy Makeover</td>
<td>Cleveland Utilities</td>
<td>Impact Cleveland/United Way City of Cleveland Cleveland Housing Authority Other Non-Profit Partners</td>
</tr>
<tr>
<td>Columbus Extreme Energy Makeover</td>
<td>Columbus Light and Water</td>
<td>City of Columbus CLEAResult</td>
</tr>
<tr>
<td>North Georgia Extreme Energy Makeover</td>
<td>North Ga EMC</td>
<td>CLEAResult Other Non-Profit Partners</td>
</tr>
<tr>
<td>Make Oak Ridge Energy Efficient (MORE2)</td>
<td>Oak Ridge Electric Department</td>
<td>City of Oak Ridge Gilmartin Engineering Works Aid to Distressed Families of Appalachian Counties (ADFAC)</td>
</tr>
<tr>
<td>4-County Extreme Energy Makeover</td>
<td>4-County EPA</td>
<td>ICF International Other Non-Profit Partners</td>
</tr>
</tbody>
</table>
SMART COMMUNITIES

Extreme Energy Makeovers (EEM) – All Projects – As of September 30, 2017*

EEM is a partnership between TVA and participating local power companies to provide whole-home, no-cost retrofits targeting 25% electric energy savings for a total of 3.389 homes in the service territories of 4 County EPA, Cleveland Utilities, Columbus Light & Water, Huntsville Utilities, Knoxville Utilities Board, North Georgia EMC and Oak Ridge Electric Department. Part of the portfolio of projects undertaken as part of the EPA settlement, EEM projects were designed to encourage community collaboration to address low-income energy burden.

**$ SPEND**

<table>
<thead>
<tr>
<th>FY 2017</th>
<th>Total FY 2015-17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual</td>
<td>Actual</td>
</tr>
<tr>
<td>21,950,000</td>
<td>43,124,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Target</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>$21,907,108</td>
<td>$42,570,000</td>
</tr>
</tbody>
</table>

Progress Toward Goal

100%

101%

**ECONOMIC IMPACT**

$34.5M

Direct impact to local communities

**MEASURES IMPACT**

- Lighting 4%
- Water Heating 15%
- Roof 0%
- Insulation 20%
- Heat Pump & Ducts 53%

**DEEMED SAVINGS (kWh)**

<table>
<thead>
<tr>
<th>Actual</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,400</td>
<td>3,389</td>
</tr>
</tbody>
</table>

Total 16,663,400

Average/home 4,898

**UPDATES**: JUNE 2017

- Completed EEM projects within 2 years
- Exceeded target number of homes
- Average energy savings of 35% per home higher than targeted 25%
- Reduced participant electric bills by approximately $500/year
- Over $34M paid directly to local businesses/contractors

*Projected as of September 30, 2017

Date Issued: August 1, 2017
Energy Efficiency Information Exchange (EEIX)

TVA formed a group of stakeholders to come together and find a solution to energy equity in the Tennessee Valley

Focus on low-income energy efficiency issues

Goal: to launch a sustainable and equitable low-income energy efficiency and educational model Valley-wide by 2018

Collaborative group of stakeholders include utility representatives, government officials, researchers, community leaders, and non-profit advocates, Habitat administrators, etc

One of the Working Groups was tasked with program design and development
EEIX Inspires WAP Solution
WAPez Technology Platform is based on eScore technology

Partnering with THDA and WAP administrators, integrate TVA’s eScore technology platform & training systems with WAP in order to streamline multiple aspects of WAP implementation to build capacity and serve more customers.
WAPez Technology Platform is based on eScore technology

WAPez Technical Platform

- Built on eScore Tech Model
- Comprehensive participant intake
- Streamlined data collection from field
- Real-time updates into central portal
- NEAT/MHEA efficiency calculations made in cloud as soon as audit is complete
- Eliminates duplicate databases (intake, audit, NEAT/MHEA, etc)
**MLGW WAPez Demonstration Pilot**

**Background**
- Memphis has one of the highest energy burdens in the country
- MLGW CEO and the NAACP requested TVA assistance
- Pilot was off ground within 2 months
- CLEAResult (TVA’s 3rd party admin) is providing field support for project

**HIGHLIGHTS**
- Contractor workforce is being trained to support WAP program
- CLEAResult assisting City of Memphis WAP program (ramp up)
- Energy education workshops expanding in Memphis
- Building relationships with community and MLGW to grow low income programs

<table>
<thead>
<tr>
<th>Project</th>
<th>LPC</th>
<th>Homes Completed</th>
<th>Target Homes</th>
<th>% Complete</th>
<th>Total Budget</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Energy Improvement Program (HEIP)</td>
<td>MLGW</td>
<td>30</td>
<td>125</td>
<td>24%</td>
<td>$1.3M</td>
<td></td>
</tr>
</tbody>
</table>

As of July 31, 2017
EPB Chattanooga WAPez Demonstration Pilot

Background
- EPB conducted a low income project mimicking Extreme Energy Makeover (EEM)
- EPB wants to support local WAP agency in Hamilton county
- TVA provided $540K for pilot to test WAPez in FY17
- EPB performs audits and manages contractors using WAPez tool

HIGHLIGHTS
- Quickly ramped up and expected to exceed targeted homes
- EPB has established relationship with local WAP agency
- Helped eliminate waiting list for Hamilton county clients
- HEU Pilot motivated WAP agency to open enrollment to recruit more clients for WAP

As of July 31, 2017
Other Low Income Initiatives

Knoxville CAC

- Knox CAC is national leader in WAP management (also a EEM team)
- TVA is funding a training facility at Knox CAC to provide WAP certification within the Valley (FY17)

Energy Education Workshops

- Energy efficiency workshops were very popular in EEM
- Growing need for workshops to help engage low income clients
- Low cost way to reach low income
- Takes advantage of TVA and local utilities expertise as trusted energy advisors
- Positive influence within the community
- ERS plans to expand energy efficiency workshop offerings in the future
On-Bill Fundraising Programs

• Many local power companies (LPCs) collect funds from customer to help other disadvantaged customers
• Funds are primarily used for bill payment assistance
• Customer participation must be voluntary
• Funds collected must benefit the customers of the utility
• Other Southeast utilities have on-bill fundraising programs
  - Georgia Power Project Share, FPL's Care to Share, Piedmont’s Share the Warmth
## LPCs with Customer On-Bill Donation Participation

<table>
<thead>
<tr>
<th>District</th>
<th>LPCs with On-Bill Donation Programs</th>
<th>%</th>
<th>Approx. Funds / Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>7</td>
<td>22%</td>
<td>NA</td>
</tr>
<tr>
<td>Kentucky</td>
<td>7</td>
<td>50%</td>
<td>$8,000</td>
</tr>
<tr>
<td>Middle TN</td>
<td>11</td>
<td>41%</td>
<td>$200,000</td>
</tr>
<tr>
<td>Mississippi</td>
<td>3</td>
<td>11%</td>
<td>$20,000</td>
</tr>
<tr>
<td>Northeast</td>
<td>18</td>
<td>78%</td>
<td>$1,320,000</td>
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<tr>
<td>Southeast</td>
<td>10</td>
<td>63%</td>
<td>$800,000</td>
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<tr>
<td>West TN</td>
<td>11</td>
<td>52%</td>
<td>$66,000</td>
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<tr>
<td>Total</td>
<td>67</td>
<td>44%</td>
<td>$2,414,000</td>
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</table>

Based on informal survey of TVA local power companies (Aug 2017)
On-Bill Donation – Types of Programs

Fixed Amount (Recurring or One Time Donation)
• Most popular format
• Customers sign up for $1 or more recurring donation

Round Up
• Utility bill is rounded up to next whole dollar

Types of Round Up Enrollment
• Opt Out – customers are automatically enrolled but can stop participating at any time
• Opt In – customers have to initiate enrollment

Funds are pooled together and allocated to 3rd party for disbursement

<table>
<thead>
<tr>
<th>District</th>
<th>LPCs with On-Bill Donation</th>
<th>Fixed Amount Recurring</th>
<th>Round Up Programs</th>
<th>OPT OUT</th>
<th>OPT IN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>7</td>
<td>7</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Kentucky</td>
<td>7</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Middle TN</td>
<td>11</td>
<td>10</td>
<td>1</td>
<td>1</td>
<td></td>
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<tr>
<td>Mississippi</td>
<td>3</td>
<td>3</td>
<td>0</td>
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<tr>
<td>Northeast</td>
<td>18</td>
<td>15</td>
<td>7</td>
<td>3</td>
<td>4</td>
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<tr>
<td>Southeast</td>
<td>10</td>
<td>6</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>West TN</td>
<td>11</td>
<td>5</td>
<td>7</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>67</td>
<td>50</td>
<td>25</td>
<td>9</td>
<td>16</td>
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</tbody>
</table>

8 LPCs offer multiple on-bill donation methods

Based on informal survey of TVA local power companies (Aug 2017)
How On-Bill Donation Funds Are Used

- Most funds are used to help emergency utility bill payment
- Typically funds are managed by a local community nonprofit
- Only 2 LPCs identified as directing funds to low income weatherization
- Use of funds is tied to the community drivers
- Strong opinions on collection methods (opt in/out)

<table>
<thead>
<tr>
<th>District</th>
<th>Bill Payment Assistance</th>
<th>Low Income Weatherization</th>
<th>Education</th>
<th>Hunger Relief/Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>7</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Kentucky</td>
<td>6</td>
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<td>Mississippi</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Northeast</td>
<td>17</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Southeast</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>West TN</td>
<td>8</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>55</strong></td>
<td><strong>2</strong></td>
<td><strong>4</strong></td>
<td><strong>17</strong></td>
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</tbody>
</table>

12 LPCs offer multiple programs

Based on informal survey of TVA local power companies (Aug 2017)