Southwest Energy Efficiency Project

• Public interest initiative founded in 2001
• Promotes greater energy efficiency in AZ & SW
• Board of Directors includes representatives from utilities, state government, national laboratory, and private sector
• Funding provided by Energy Foundation, Hewlett Foundation, Edwards Mother Earth Foundation, Sea Change Foundation, U.S. Department of Energy, and the Environmental Protection Agency

www.swenergy.org
Arizona’s Electric Landscape

- 45 utilities in 2008
  - 5 investor-owned
  - 3 federally-owned
  - 9 cooperatives
  - 28 publically-owned

- 3 dominate sales

- Corporation Commission (ACC) regulates 14
  - Including APS & TEP, but not SRP

![Arizona Electric Sales by Utility, ‘08](chart)

- Arizona Public Service Company (APS): 38%
- Salt River Project (SRP): 36%
- Tucson Electric Power Company (TEP): 13%
- Other: 13%
AZ Savings: Past and Future

APS: Annual Energy Savings as a % of Retail Sales

0.10% 0.30% 0.70% 0.90% 0.70% 1.00% 1.25% 1.50%

2005 2006 2007 2008 2009 2010 2011 2012

APS Rate Case Settlement

0.10% 0.30% 0.70% 0.90% 0.70% 1.00% 1.25% 1.50%
AZ Energy Efficiency Standard

• Approved unanimously by ACC in July 2010
• Requires ACC-regulated electric utilities to:
  – Achieve cumulative annual energy savings of 22% by 2020 (goals each year; % applies to prior year retail sales)
  – Requirement includes a 2% credit for peak load reductions from demand response
• Electric Coops required to meet 75% of standard
• Countable energy savings may include
  – Savings from combined heat and power
  – Up to 1/3 of the measured savings from building energy codes (adoption or implementation/compliance)
• Gas standard: 6% energy savings by 2020
AZ EES & Expected Savings for APS

- Cumulative annual energy savings exceed 6,800 GWh in 2020; ~ $7 billion in bill savings (2011-2030) for APS customers
- Annual energy savings exceed 2% starting in 2014

LBNL Energy Analysis Department, Electricity Markets and Policy Group
AZ Energy Efficiency Standard: 22% Savings by 2020

Energy Efficiency Standard: APS Example

Retail Energy Sales (GWh)

- APS growth in energy sales reduced from 2.8% to 1.1% per year
- TEP growth reduced from 1.5% to -0.2% per year
The Effect of Much Higher EE Savings

AZ 2008

- Energy efficiency becomes one-fifth of the energy “pie” in 2020
- Lower total costs, lower utility bills, more jobs, less pollution
- Deferral of three large baseload plants from the early 2020’s to 2030’s (and by then more renewables, storage, electric vehicles)
- Plus $9 billion in lower customer bills (2011-2030; APS, TEP, Coops)
Deeper and Broader Savings

• **Deeper**: Capture all the cost-effective opportunities and maximize energy cost savings for each customer

• **Broader**: Reach more customers

• **To achieve AZ EE standard of 22% by 2020:**
  – Each customer needs to *save more energy* (20% to 50% energy savings or more, rather than 5-10% savings)
  – EE programs need to *reach more customers*
  – Annual savings *must exceed 2% of retail sales*

• **Deeper first, then broader**
## Evolution in EE Programs

<table>
<thead>
<tr>
<th>Conventional EE Programs</th>
<th>Programs for 2%+ Savings</th>
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</thead>
<tbody>
<tr>
<td>Shallower savings</td>
<td>Deeper savings first, then broader</td>
</tr>
<tr>
<td>Single measure</td>
<td>Multiple measures</td>
</tr>
<tr>
<td>Single end use (lighting, HVAC)</td>
<td>Whole facility, all end uses</td>
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<tr>
<td>Single fuel (electric or gas)</td>
<td>Integrated, all fuels</td>
</tr>
<tr>
<td>Easier segments (e.g., homeowners)</td>
<td>All customer segments</td>
</tr>
<tr>
<td>Rebates to customers</td>
<td>Broad array of financial incentives to customers (and/or upstream)</td>
</tr>
<tr>
<td>No financing</td>
<td>Convenient and attractive financing through the EE program</td>
</tr>
<tr>
<td>Single message marketing</td>
<td>Multiple messages, multiple channels, targeted to segments</td>
</tr>
<tr>
<td>EE as a unique, extra effort (as perceived by customers)</td>
<td>Infuse EE into all actions and decisions, all market opportunities</td>
</tr>
<tr>
<td>Single year/short term focus</td>
<td>10 year time horizon (or longer)</td>
</tr>
</tbody>
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Three Main Types of Program Offerings

• Deeper, comprehensive, multi-fuel, whole building approaches with supporting program strategies (e.g., financing, project facilitation, feedback, labeling, etc.) – retrofit and new construction

• Product/appliance/equipment lost opportunities and point-of-sale (customers are going to buy something, make it energy efficient)

• Information/outreach and customer behavior/feedback approaches
  – Also help to market other program offerings
Key Challenges and Issues

- Vision – know where you are going and how to get there
- Political will
- Inertia (stuck in what we have been doing)
- Resource allocation; funding pressures, ratepayer impacts
- Financing over time, to reduce upfront barriers, to better match costs with timing of benefits, to have participants pay for a larger share of the project (in a convenient and attractive way), and also to reduce pressure on ratepayer funds
- Umbrella programs organized by major market; also provides flexibility
- Multiple markets and customer segments -> multiple strategies
- Marketing, education, behavior, social marketing
- EE workforce and infrastructure
- Quality assurance with much higher volume
- If utility program administration, need utility EE business model
- Looking ahead and thinking strategically through stages of ramp up (while rushing to achieve short term goals)
- Do and learn
Dedicated to More Efficient Energy Use in the Southwest

Resources available online at:
www.swenergy.org

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