Arizona Public Service Co.
DSM Update

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Manager, DSM Programs

Presented to SWEEP Workshop
November 9, 2009
Topics – as requested

1. Program Results
   - Spending
   - Savings
   - Cost effectiveness

2. Recent Program Developments
   - Residential New Construction program expansion
   - Residential HVAC program modification
   - Solutions for Business targeting opportunity

3. ARRA Activities

4. Future Program Changes
   - Rate case settlement
   - New programs/measures for 2010
   - Proposed EE Standard in AZ

Energy Efficiency
# Program Results -- Spending

($)MM including Performance Incentive

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual Spending</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>$3.2</td>
</tr>
<tr>
<td>2006</td>
<td>$10.6</td>
</tr>
<tr>
<td>2007</td>
<td>$19.4</td>
</tr>
<tr>
<td>2008</td>
<td>$24.2</td>
</tr>
<tr>
<td>2009 est.</td>
<td>$25.0</td>
</tr>
<tr>
<td>2010 proj.</td>
<td>$49.9</td>
</tr>
<tr>
<td>2011 proj.</td>
<td>$80.0*</td>
</tr>
<tr>
<td>2012 proj.</td>
<td>$120.0*</td>
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</tbody>
</table>

* Preliminary estimate

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<table>
<thead>
<tr>
<th>Year</th>
<th>Annual Savings</th>
<th>% of Sales</th>
<th>Cumulative Savings</th>
<th>% of Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>19,000</td>
<td>0.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>82,000</td>
<td>0.3%</td>
<td>101,000</td>
<td>0.4%</td>
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<tr>
<td>2007</td>
<td>209,000</td>
<td>0.7%</td>
<td>310,000</td>
<td>1.1%</td>
</tr>
<tr>
<td>2008</td>
<td>255,000</td>
<td>0.8%</td>
<td>565,000</td>
<td>1.9%</td>
</tr>
<tr>
<td>2009 est.</td>
<td>230,000</td>
<td>0.8%</td>
<td>795,000</td>
<td>2.7%</td>
</tr>
<tr>
<td>2010 proj.</td>
<td>320,000</td>
<td>1.0%</td>
<td>1,115,000</td>
<td>3.7%</td>
</tr>
<tr>
<td>2011 proj.</td>
<td>400,000</td>
<td>1.25%</td>
<td>1,515,000</td>
<td>4.9%</td>
</tr>
<tr>
<td>2012 proj.</td>
<td>490,000</td>
<td>1.5%</td>
<td>2,005,000</td>
<td>6.4%</td>
</tr>
</tbody>
</table>

* After MER adjustments
## Program Results – Cost Effectiveness

<table>
<thead>
<tr>
<th>Year</th>
<th>$/LT kWh</th>
<th>TRC</th>
</tr>
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<tbody>
<tr>
<td>2005</td>
<td>$0.027</td>
<td>1.9</td>
</tr>
<tr>
<td>2006</td>
<td>$0.017</td>
<td>2.2</td>
</tr>
<tr>
<td>2007</td>
<td>$0.010</td>
<td>2.8</td>
</tr>
<tr>
<td>2008</td>
<td>$0.009</td>
<td>3.0</td>
</tr>
<tr>
<td>2009 est.</td>
<td>$0.011</td>
<td>2.5</td>
</tr>
<tr>
<td>2010 proj.</td>
<td>$0.014</td>
<td>2.6</td>
</tr>
<tr>
<td>2011 proj.</td>
<td>$0.017*</td>
<td>?</td>
</tr>
<tr>
<td>2012 proj.</td>
<td>$0.022*</td>
<td>?</td>
</tr>
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</table>

* Preliminary estimate
Program Results – Summary

- Programs have ramped up rapidly in past 4 years
- After start-up, programs have been extremely cost effective
- Shifting from $ spending target to MWh savings target, beginning in 2010
- Programs to expand even more rapidly in next 3 years
- Delivered cost of programs expected to rise as “low hanging fruit” (CFLs) dries up and goals increase
Recent Program Developments

A. Residential New Construction program expansion
   - ENERGY STAR Homes and Solar

B. Residential HVAC program modification
   - Quality Installation and equipment rebates

C. Solutions for Business targeting opportunity
   - Pump test and repair initiative
ENERGY STAR Homes and Solar

- Kicked off to builders in April 2009
- Requires builders to meet ENERGY STAR efficiency requirement (HERS=85) to get solar rebates
- Promotes communities where all homes are “solar ready” and at least 50% of homes include solar PV or solar hot water when built
- Rebates to builder:
  - ENERGY STAR only $400 / home
  - Solar ready + $100
  - Both solar PV and solar water heat + $900
- Currently, two builders participating
  - Shea Homes (~130 lots) -- PV systems on all homes
  - Monarch Homes (~25 lots) -- PV & water on all homes
- Creates path to Net Zero Energy homes
Residential HVAC Program

- Program provides rebates for AC equipment, Quality Installation, Duct Test & Repair
- 2008 program evaluation raised concerns about cost effectiveness
- Two major program changes approved in 2009 based on evaluation results and contractor input
- April 2009 changes:
  - Changed equipment rebate amounts and required quality installation for all equipment (including 13 SEER)
  - Only “Qualified Contractors” could offer equipment rebates
- October 2009 changes:
  - Modified Qualified Contractor requirements to allow flexibility in sources of training and reduce cost to contractors
- Changes working → added 80 contractors this year; rebate volumes at 800-1,000 per month; program cost effective
- Duct Test & Repair rebates very popular; 150 per month this year, very cost effective, good customer and contractor feedback
Pump Test and Repair Initiative

- Solutions for Business program: prescriptive and custom incentives popular for lighting, cooling, and refrigeration
- Large water pumping applications – significant opportunity for efficiency improvements, but little participation to date
- Began initiative in June to identify customers with high energy use from pumps for irrigation, water pumping, waste water treatment
- Targeted municipalities, golf courses, large industrials
- Program features:
  - Free testing
  - Customer implements recommendations and repair/replace cost is partially offset by program incentives
  - Significant energy and cost savings to customer
- Currently 4 large customers doing testing; potential to contribute 5-10% toward annual portfolio savings goal in 2010
ARRA Activities

- Received ACC clarification that stimulus funds could supplement program incentives up to 100% of incremental cost of efficiency projects
- Working with customers on identifying high potential energy saving projects for use of ARRA dollars
- Hosted 2 workshops on how customers can use ARRA funding and leverage DSM programs
  - Cities and towns (May 6) – EECBG $
  - School districts (Oct. 1) – SEP $
- Currently assisting cities and towns with grant applications to obtain EECBG competitive grants; looking for 5:1 leverage for funds
Future Program Changes

- Rate case settlement
- Program portfolio for 2010
- Proposed Energy Efficiency Standard in Arizona
Rate Case Settlement

- Requires increased Energy Efficiency opportunities for customers to manage their bills
- Sets MWh savings targets; rather than spending targets
- Establishes EE savings goals for 2010-2012 as a % of total energy resources

<table>
<thead>
<tr>
<th>Year</th>
<th>% of Total Energy Resources</th>
<th>Estimated Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>1.00 %</td>
<td>320,000 MWh</td>
</tr>
<tr>
<td>2011</td>
<td>1.25 %</td>
<td>400,000 MWh</td>
</tr>
<tr>
<td>2012</td>
<td>1.50 %</td>
<td>490,000 MWh</td>
</tr>
</tbody>
</table>

- Requires filing of annual EE Implementation Plan
- Creates specific new energy efficiency programs / measures for 2010, once approved in Implementation Plan
- Decision expected in December 2009
2010 Implementation Plan

New programs / measures proposed:

- **Residential**
  - ENERGY STAR Plus homes (HERS = 70)
  - Pool pumps and timer rebates
  - Appliance recycling
  - Home Performance whole house energy audits
    - Insulation and air sealing
    - Shade screens
    - Direct install of CFLs and low flow water fixtures
  - Low income program enhancements

- **Business**
  - New Construction “Savings by Design” whole building approach
  - Customer financing option
  - Self-Direction for large customers
Energy Efficiency Standard

- Workshops held in April / May
- ACC Staff proposed rules issued October 29
  - Cumulative savings by 2020 equivalent to 22% of 2005 retail sales
  - Demand response energy allowed to count up to 2%
  - Historical energy savings allowed to count up to 3%
  - No provision for changes to codes and standards
  - No provision for treatment of unrecovered fixed costs
- Would put AZ among top-tier states for energy savings from EE programs
- Parties commenting this week; rulemaking expected in 2010
"Not Too Technical" Summary

- Lots of regulatory action expected soon
- Resulting in lots of new programs and measures
- Producing lots of exciting opportunities for APS customers to manage their electric bills through Energy Efficiency
- Creating lots of happy customers and lots of praise from SWEEP!!