Colorado Market Potential Assessment
Colorado DSM Informational Workshop
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2006 DSM Potential Assessment

- **Goals of study were to:**
  - estimate levels of DSM available to customer classes,
  - the associated costs, and
  - the achievability of such levels of DSM in Colorado.

- **Quantity of DSM defined as sum of differences in energy use between base efficiency technologies (e.g. incandescent bulbs) and the more efficient option (e.g. compact fluorescent bulbs)**

- **Assumes use of traditional form of DSM – program administrator provides rebates to customers for purchasing energy efficient option; serves to reduce barriers**

- **The Assessment used surveys and secondary research to estimate DSM amounts for each of the categorized levels**
Categories – Technical, Economic, Achievable

- **Technical potential** represents an idealized scenario in which all base level energy efficiency measures are replaced with high efficiency measures.

- **Economic potential** sums the energy savings from the subset of technical potential measures that are cost effective when compared to supply side alternatives (using the Total Resource Cost test).

- **Achievable potential** estimates the energy/demand savings the utility can procure based on different levels of rebates.

- **Xcel Energy’s study used 3 levels**
  - 33%, 50% and 75% rebates
  - Percentage is the portion of incremental measure cost the rebate covers
Technical, Economic, & Achievable Potentials

- Technical: 6552 GWh, 2031 MW
- Economic: 5209 GWh, 1585 MW
- Achievable 75%: 1313 GWh, 360 MW
- Achievable 50%: 644 GWh, 216 MW
- Achievable 33%: 384 GWh, 170 MW
- Settlement Agreement: 800 GWh, 320 MW

GWh and MW signify Gigawatt Hours and Megawatts, respectively.
Discussion of Economic & Achievable Potential

- Large differences between economic and achievable result from estimated barriers to customer implementation in Colorado
  - Barriers to customer implementation of energy efficient measures include: higher first cost, concerns about quality, lack of information, small role energy plays in total budget, among other reasons
  - Markets like Colorado with lower historical investments in DSM tend to have higher barriers
  - Potential studies measure customer “awareness” of measures and “willingness” to purchase and install – also use “adoption curves” to show how customers adopt over time

- For example, Colorado contrasts with Xcel Energy’s Minnesota service territory, where levels of awareness/willingness are higher and differences between economic and achievable are also smaller
## Colorado Market Potential Study

### Summary of Achievable Potential Results: 2006–2013

<table>
<thead>
<tr>
<th>Result</th>
<th>Base Case 1</th>
<th>Base Case 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>33% Incentive</strong></td>
<td><strong>50% Incentive</strong></td>
<td><strong>75% Incentive</strong></td>
</tr>
<tr>
<td>Gross Energy Savings - GWh</td>
<td>639</td>
<td>899</td>
</tr>
<tr>
<td>Gross Peak Demand Savings - MW</td>
<td>206</td>
<td>252</td>
</tr>
<tr>
<td>Net Energy Savings – GWh (800 GOAL)</td>
<td>384</td>
<td>644</td>
</tr>
<tr>
<td>Net Peak Demand Savings – MW (320 GOAL)</td>
<td>170</td>
<td>216</td>
</tr>
<tr>
<td>Program Costs - Real, $ million</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administration</td>
<td>$14</td>
<td>$27</td>
</tr>
<tr>
<td>Marketing</td>
<td>$30</td>
<td>$37</td>
</tr>
<tr>
<td>Incentives</td>
<td>$84</td>
<td>$135</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$128</strong></td>
<td><strong>$199</strong></td>
</tr>
<tr>
<td>PV Avoided Costs ($ mil.)</td>
<td>$554</td>
<td>$707</td>
</tr>
<tr>
<td>PV Annual Program Costs ($ mil.) (196 mil. BUDGET)</td>
<td>$88</td>
<td>$147</td>
</tr>
<tr>
<td>PV Participant Costs ($ mil.)</td>
<td>$122</td>
<td>$150</td>
</tr>
<tr>
<td>TRC Ratio</td>
<td>2.6</td>
<td>2.4</td>
</tr>
</tbody>
</table>

**Incentive**

- **33% Incentive**
- **50% Incentive**
- **75% Incentive**

**Gross Energy Savings - GWh: 639, 899, 1,568**

**Gross Peak Demand Savings - MW: 206, 252, 396**

**Net Energy Savings – GWh (800 GOAL): 384, 644, 1,313**

**Net Peak Demand Savings – MW (320 GOAL): 170, 216, 360**

**Program Costs - Real, $ million**

- **Administration: $14, $27, $50**
- **Marketing: $30, $37, $45**
- **Incentives: $84, $135, $330**
- **Total: $128, $199, $425**

**PV Avoided Costs ($ mil.): $554, $707, $1,090**

**PV Annual Program Costs ($ mil.): $88, $147, $334**

**PV Participant Costs ($ mil.): $122, $150, $200**

**TRC Ratio: 2.6, 2.4, 2.1**
Market Potential Study
Settlement Goals

- Achievable 75%
  - GWh: 1313
  - MW: 360
  - Cost: $334

- Achievable 50%
  - GWh: 644
  - MW: 216
  - Cost: $147

- Achievable 33%
  - GWh: 384
  - MW: 170
  - Cost: $88

- Settlement Agreement
  - GWh: 800
  - MW: 320
  - Cost: $196

Legend:
- GWh
- MW
- Cost
Are there opportunities for growth?

- Yes, but likely will take time in the market to develop
- As awareness of programs and EE opportunities grow, adoption curves can shift as in MN experience, especially beyond 8 years
- Industrial potential in Market Potential Assessment may be light
- City and business partnerships are quickly emerging – greater market involvement can increase adoption rates
- Increased local government and business interest in combating global warming
- Legislation to allow gas programs can also increase cross-fuel program opportunities