Utah Energy Efficiency Strategy

Howard Geller

Presentation of Southwest Regional Energy Efficiency Workshop
Albuquerque, NM
Nov. 15-16, 2007
Background

- Utah Governor Jon Huntsman, Jr. adopted a strong energy efficiency goal in April 2006 – a 20% improvement in the efficiency of energy use statewide by 2015.
- Governors’ Office requested preparation of a strategy to meet the goal.
- SWEEP assembled team including Utah Clean Energy, ACEEE, and Intermountain CHP Center to prepare the strategy.
- Funding provided by Governor’s Office, U.S. EPA, and Hewlett Foundation.
Background (cont.)

- Oversight of strategy preparation provided by Governor’s Energy Advisor
- Kick-off workshop organized to solicit ideas and feedback in December 2006
- Draft report issued in May 2007
- Report revised based on substantial and valuable feedback from stakeholders
- Final report represents views of the authors
Overview

- Study examines 23 major policies or initiatives that would help to achieve Governor Huntsman’s energy efficiency goal
- Educational, incentive and regulatory options
- Addresses the efficiency of electricity, natural gas, gasoline, or diesel fuel use
- Defines 20% efficiency improvement as 16.7% reduction in energy use
- Analyzes energy savings potential, cost, cost effectiveness, environmental and social benefits, political viability, and priority
High Priority Policies

- Energy savings standards or targets for electric utility Demand-Side Management (DSM) programs
- Expansion of natural gas utility energy efficiency programs
- Upgrade building energy codes and fund code training and enforcement
- Lamp and appliance efficiency standards for products not covered by federal standards
- Expand low-income home weatherization
High Priority Policies (cont.)

- Industry challenge and recognition program to stimulate industrial energy intensity reductions
- Energy savings targets for state agencies
- Clean car standards for new cars and light trucks
- Pay-as-you-drive insurance
- Reduce rate of growth of vehicle use
- Broad-based public education campaign
## Electricity Savings by Option (GWh per year)

<table>
<thead>
<tr>
<th>OPTION</th>
<th>2010</th>
<th>2015</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity DSM</td>
<td>894</td>
<td>2,375</td>
<td>4,108</td>
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<tr>
<td>Building codes</td>
<td>214</td>
<td>674</td>
<td>1,391</td>
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<tr>
<td>Appliance and lamp standards</td>
<td>137</td>
<td>1,334</td>
<td>2,137</td>
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<tr>
<td>Industrial challenge</td>
<td>130</td>
<td>615</td>
<td>1,183</td>
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<tr>
<td>Public sector initiatives</td>
<td>169</td>
<td>421</td>
<td>604</td>
</tr>
<tr>
<td>Public education</td>
<td>226</td>
<td>393</td>
<td>420</td>
</tr>
<tr>
<td>Other</td>
<td>202</td>
<td>377</td>
<td>476</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1,972</strong></td>
<td><strong>6,189</strong></td>
<td><strong>10,319</strong></td>
</tr>
</tbody>
</table>
Electricity Scenarios (GWh per year)

- **Baseline**
- **High efficiency**

![Bar chart showing electricity scenarios from 2006 to 2020 for baseline and high efficiency scenarios.](chart.png)
### Natural Gas Savings by Option (million decatherms per year)

<table>
<thead>
<tr>
<th>OPTION</th>
<th>2010</th>
<th>2015</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas DSM</td>
<td>2.33</td>
<td>8.27</td>
<td>14.94</td>
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<tr>
<td>Building codes</td>
<td>1.25</td>
<td>3.74</td>
<td>7.48</td>
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<tr>
<td>Conservation ordinances</td>
<td>0.40</td>
<td>1.20</td>
<td>1.60</td>
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<tr>
<td>Industrial challenge</td>
<td>0.78</td>
<td>3.71</td>
<td>7.25</td>
</tr>
<tr>
<td>Public sector initiatives</td>
<td>0.78</td>
<td>2.10</td>
<td>2.96</td>
</tr>
<tr>
<td>Public education</td>
<td>1.09</td>
<td>1.75</td>
<td>1.69</td>
</tr>
<tr>
<td>Other</td>
<td>0.52</td>
<td>1.42</td>
<td>2.05</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7.23</td>
<td>22.19</td>
<td>37.97</td>
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Natural Gas Scenarios (million decatherms per year)
<table>
<thead>
<tr>
<th>OPTION</th>
<th>2010</th>
<th>2015</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean Car standards</td>
<td>0.24</td>
<td>2.08</td>
<td>4.59</td>
</tr>
<tr>
<td>Feebates</td>
<td>0.16</td>
<td>0.98</td>
<td>1.78</td>
</tr>
<tr>
<td>PAYD insurance</td>
<td>0.03</td>
<td>1.50</td>
<td>3.30</td>
</tr>
<tr>
<td>Reduce VMT growth</td>
<td>0.11</td>
<td>0.71</td>
<td>1.42</td>
</tr>
<tr>
<td>Enforce speed limits</td>
<td>0.62</td>
<td>0.70</td>
<td>0.80</td>
</tr>
<tr>
<td>Truck efficiency measures</td>
<td>0.25</td>
<td>0.99</td>
<td>1.44</td>
</tr>
<tr>
<td>Replacement tire standards</td>
<td>0.20</td>
<td>0.68</td>
<td>0.74</td>
</tr>
<tr>
<td>TOTAL (Totals do not equal sum of rows)</td>
<td>1.52</td>
<td>6.72</td>
<td>11.80</td>
</tr>
</tbody>
</table>
Gasoline and Diesel Fuel Scenarios (million barrels per year)
Net Economic Benefit

Total Economic Benefit - $7.1 billion

- DSM options: 3%
- Building and appliance options: 17%
- Industrial options: 6%
- Public sector options: 2%
- Transportation options: 52%
- Education options: 20%

Legend:
- DSM options
- Building and appliance options
- Industrial options
- Public sector options
- Transportation options
- Education options
CO₂ Emissions Reduction

Total CO2 Emissions Reduction in 2015 - 7.9 million metric tons per year

- DSM options: 26%
- Building and appliance options: 31%
- Industrial options: 23%
- Public sector options: 12%
- Transportation options: 5%
- Education options: 3%

Diagram showing the breakdown of various options contributing to the CO₂ emissions reduction.
Overall Results and Benefits

- Policies in combination meet Governor Huntsman’s energy efficiency goal for energy types considered.
- Net economic benefit of over $7 billion for households and businesses in the state.
- Substantial reduction in CO$_2$ emissions – 7.9 million metric tons per year by 2015.
- Policies also reduce emissions of other pollutants, reduce water consumption, help businesses be more competitive and profitable, and increase employment.
Next Steps

- A number of the policies already being implemented to some degree – utility DSM programs, statewide building code, public sector initiatives, VMT reduction

- Policies and analysis were presented to the Governor’s office, legislature, PUC, and other interested parties

- Policies and analysis feed into state climate action plan now under development

- Further elaboration of policies of interest to decision makers in Utah
SWEEP:
Dedicated to More Efficient Energy Use in the Southwest

Resources available online at:
www.swenergy.org

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