Xcel Energy Overview

- Gas Customers: 1.8 M
- Electric Customers: 3.3 M
Xcel Energy’s Environmental Leadership

- No. 1 wind energy provider
- Windsource – Largest voluntary green pricing program
- Voluntary carbon management strategy
- New technologies
- Comprehensive CSR reporting
- Member of Dow Jones Sustainability Indexes
Renewable Energy Benefits

- Meets needs of customers, shareholders, environmental groups, regulators
- Significant component of CO$_2$ reduction strategy
- Reduces risk for future climate change regulation
- Takes advantage of our geography
Our Geographic Advantage: Wind Density

Source: National Renewable Energy Laboratory

Wind Density
- High
- Low

Xcel Energy States Served
## Renewable Energy Standard Legislation

<table>
<thead>
<tr>
<th>State</th>
<th>Renewable Portfolio Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minnesota</td>
<td>30% by 2020</td>
</tr>
<tr>
<td>Colorado*</td>
<td>20% by 2020</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>12.9% by 2015</td>
</tr>
<tr>
<td>New Mexico*</td>
<td>20% by 2020</td>
</tr>
<tr>
<td>Texas</td>
<td>5% by 2015 (capacity)</td>
</tr>
<tr>
<td>North Dakota</td>
<td>10% objective by 2015 (voluntary)</td>
</tr>
<tr>
<td>South Dakota</td>
<td>10% objective by 2015 (voluntary)</td>
</tr>
</tbody>
</table>

* Colorado – Includes 4% solar carve-out; half is on-site
* New Mexico – Includes carve-out (20% solar, 10% biomass, 1.5-3% DG)
Xcel Energy Renewable Energy Resources

<table>
<thead>
<tr>
<th>Source</th>
<th>MW 2007</th>
<th>MW 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind</td>
<td>2,694</td>
<td>7,400</td>
</tr>
<tr>
<td>Hydro</td>
<td>365</td>
<td>400</td>
</tr>
<tr>
<td>Solar</td>
<td>17</td>
<td>600</td>
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<tr>
<td>Biomass</td>
<td>183</td>
<td>250</td>
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<tr>
<td>RDF</td>
<td>100</td>
<td>60</td>
</tr>
<tr>
<td>Landfill</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Geothermal</td>
<td>0</td>
<td>20</td>
</tr>
</tbody>
</table>

MW
- Nuclear: 12%
- Renewables & Hydro: 10%
- Gas & Oil: 21%
- Coal: 57%

Nuclear: 13%
- Renewable & Hydro: 24%
- Gas & Oil: 17%
- Coal: 46%
Recent Initiatives: Minnesota Resource Plan

- Plan extends 2008 - 2020
- Achieves 22% CO₂ reduction by 2020
- Least cost strategy
- Acquisition plans:
  - 2600 MW of new wind
  - Includes 500 MW of community-based wind
- Also includes energy efficiency, hydro power
Recent Initiatives: Colorado Resource Plan

- Plan extends 2008 - 2015
- Achieves 10% CO$_2$ reduction by 2017
- Incremental costs are within 2% mandated cap
- Acquisition plans
  - 800 MW wind
  - Over 250 MW solar
- Also includes plant retirements, increased energy efficiency goals
Renewable Energy Challenges

- Intermittency
  - Potential renewable storage solutions:
    - CSP with storage
    - Wind to hydrogen
    - Wind to battery
    - Compressed air

- Resource Acquisition
  - Timing of RFP selection, construction timelines, transmission planning

Under construction near Grenada, Spain
50 MW plus 6 hours storage
Renewable Energy Challenges

- Wind production tax credits
- Solar Investment tax credits
- Ownership

Alamosa Colorado 8.2 MW photovoltaic plant
Renewable Energy and National Climate Policy

Goal: Continue to focus on most cost-effective emissions reductions

- Renewable energy plays a significant role in a clean energy future
- Climate policy should encourage renewable development
- Flexibility and credit for renewable leadership are key