Sustainability at PG&E: Building a Foundation for the Future

Nancy McFadden
Senior Vice President
PG&E’s Sustainability Journey

- **1990's**: Published first annual environmental report
- **2000**: Adopted environmental policy
- **2001**: Published first Corporate Responsibility Report
- **2002**: Began annual employee environmental awards
- **2003**: Adopted climate change policy
- **2004**: Joined Ceres
- **2005**: Adopted decoupling
- **2006**: Dow Jones Sustainability Index
- **2007**: "AAA" Innovest Rating
- **2008**: Top 10 Carbon Disclosure Project
- **2009**: Dow Jones Sustainability “World” Index

Newsweek #1 utility ranking
<table>
<thead>
<tr>
<th>Year</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980s</td>
<td>Adopted decoupling</td>
</tr>
<tr>
<td>1990s</td>
<td>Adopted environmental policy</td>
</tr>
<tr>
<td>1990s</td>
<td>Published first annual environmental report</td>
</tr>
<tr>
<td>1990s</td>
<td>Adopted environmental justice policy</td>
</tr>
<tr>
<td>2000</td>
<td>Published first Corporate Responsibility Report</td>
</tr>
<tr>
<td>2001</td>
<td>Began annual employee environmental awards</td>
</tr>
<tr>
<td>2002</td>
<td>Adopted climate change policy</td>
</tr>
<tr>
<td>2003</td>
<td>Joined Ceres</td>
</tr>
<tr>
<td>2004</td>
<td>“AAA” Innovest Rating</td>
</tr>
<tr>
<td>2005</td>
<td>Dow Jones Sustainability Index</td>
</tr>
<tr>
<td>2006</td>
<td>Dow Jones Sustainability “World” Index</td>
</tr>
<tr>
<td>2008</td>
<td>Launched PowerPathway program</td>
</tr>
<tr>
<td>2008</td>
<td>Named Chief Diversity Officer</td>
</tr>
<tr>
<td>2009</td>
<td>Named Chief Sustainability Officer</td>
</tr>
</tbody>
</table>

PG&E’s Sustainability Journey

- **1980s**: Adopted decoupling
- **1990s**: Adopted environmental policy, Published first annual environmental report, Adopted environmental justice policy
- **2000**: Published first Corporate Responsibility Report
- **2001**: Began annual employee environmental awards
- **2002**: Adopted climate change policy
- **2003**: Joined Ceres
- **2004**: “AAA” Innovest Rating
- **2005**: Dow Jones Sustainability Index
- **2006**: Dow Jones Sustainability “World” Index
- **2008**: Launched PowerPathway program
- **2009**: Named Chief Diversity Officer, Named Chief Sustainability Officer
Energy Use per Capita

- US
- CA
- Western Europe
Investing in Renewables and Emerging Technologies

California’s mandate of 20% renewable energy by 2010 is the most aggressive renewable energy goal in the U.S.

California’s Governor recently signed an Executive Order calling for 33% by 2020.

We are pursuing a diverse portfolio that includes both traditional and emerging renewable technologies.
California Eligible Renewable Resources

**Traditional:**
- Biomass Energy
- Wind Energy
- Small Hydropower (<30MW)
- Geothermal Energy

**Emerging:**
- Solar Energy
- BioGas
- Ocean Power

Also includes fuel cells using renewable fuel, biodiesel, and municipal solid waste conversion using a non-combustion thermal process
Plug-in Electric Vehicles are coming to market

Potential for greenhouse gas reduction and increased energy security

Plug-in electric vehicle (PEV) penetration highly correlated to gasoline prices

Automobile OEMs designing PEV drivetrains into many different model types:

- Performance (Tesla)
- Luxury (Fisker, Tesla, Audi)
- Family (GM, Nissan, BYD, Toyota, Ford, Volvo)
- Compact (BMW, Mitsubishi, Smart, Hyundai, Toyota)
- SUV (Ford, Jeep)
- Mini-Van (Bright Idea, Chrysler, Ford)

Majority of automakers are introducing plug-in vehicles
Toward a Smart Grid

A smart grid has the potential to facilitate the move toward the low carbon economy

- Cleaner generation portfolio
- Efficient use of grid resources
- Broad deployment of energy efficient infrastructure
- Increased energy awareness and conservation
- Plug-in hybrid electric vehicles
Laying the Foundation through SmartMeter™

PG&E has installed more than 3.5 million SmartMeter™ gas and electric meters—more advanced meters than any other utility in the nation.
Climate Change – Different Views

Costs of action versus inaction

U.S. leadership versus a global agreement

Economy wide comprehensive cap & trade bill versus incremental changes in energy policy to reduce emissions

Anyway you look at it, the US will take steps, either legislative or regulatory, to reduce greenhouse gas emissions, whether through a market based approach or a command and control approach

Overall target: emission reduction goal of 17% below 2005 by 2020 and 83% below 2005 by 2050

Key program measures (non market-based regulation) include:

• 20% of electricity from renewable and energy efficiency by 2020
• investment in clean energy technology and energy efficiency
• energy standards for buildings, appliances and industry
Federal Developments – Waxman-Markey H.R. 2454, (continued)

Key cap and trade design elements (market-based regulation):

• **Covered Sectors** – Electric, Industrial, Transportation and Small Natural Gas Users

• **Point of Regulation** – Electric: generating facilities, Natural Gas: LDC for small commercial and natural gas users

• **Offsets**
  • Maximum of 2 billion tons of offsets – 1 billion from domestic sources and 1 billion from international sources (equivalent to ~30% of emissions cap)

• **Flexible Compliance / Cost Containment**
  • 2 year compliance period
  • Unlimited banking
  • Unlimited borrowing in the next year followed by limited (up to 15%) borrowing in years 2-5 with 8% annual interest

• **Allowance Allocations**
  • 85% of allowances will be allocated freely in the first year, declining over time
  • The remaining 15% will be auctioned with the funds directed to offset higher costs for low income consumers
Sustainability at PG&E: Building a Foundation for the Future

Nancy McFadden
Senior Vice President