# Electricity Demand

Current Capacity = 1 TW  2050 Capacity = 1.5 TW

<table>
<thead>
<tr>
<th>Current Source</th>
<th>Current %</th>
<th>2050 Source</th>
<th>2050 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal</td>
<td>50%</td>
<td>Coal</td>
<td>33%</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>20%</td>
<td>Natural Gas</td>
<td>20%</td>
</tr>
<tr>
<td>Nuclear</td>
<td>20%</td>
<td>Nuclear</td>
<td>39%</td>
</tr>
<tr>
<td>Hydro</td>
<td>7%</td>
<td>Hydro</td>
<td>5%</td>
</tr>
<tr>
<td>Renewables</td>
<td>3%</td>
<td>Renewables</td>
<td>3%</td>
</tr>
</tbody>
</table>
Nuclear Supply Challenge to Meet 2050 Demand

- In the next 20 years
- Replace 34 reactors
- Build out 50 new reactors by 2050
Challenges for the Back End of the Nuclear Fuel Cycle

- Fukushima Risk Awareness
- Unpacking Fuel Pools
- Removal of dry casks from highly populated areas
- Central Interim Storage Facility
- Geologic Repository
- Dry Cask Storage Limits
- Financing
Blue Ribbon Commission Recommendations

- Mined Geologic Repository
- Centralized Interim Storage
- Private/Public Corporation to Manage Waste Fund
- Willing Community, Willing State with Appropriate Geologic Medium
- Testing of the Medium
Yucca Mountain Status

- Court Decision Pending
- Requires World’s Supply of Titanium for Drip Shields
- Questions about Porosity
- Questions about Seismic Stability
- Nevada is Opposed
Repository Options

- Granite, Clay, Tuft, Salt
- Process
  - Research Sites’ Performance
  - Peer Reviewed Testing Approach
  - WIPP Could Serve as Testing Site for Salt
    - Testing Proposal Completed
  - 6 Years to Complete
  - Performance Assessment
  - Supplemental EIS
  - NRC Licensing
Interim Storage Option

- Need Pilot Facility
- How to Construct, Transport, Load/Unload
- Container Metallurgic Research
Financing

- Nuclear Waste Fund Generates $780 Million annually
- Presently Scored as Revenue
- Balance in Fund Collected $26 Billion
- Industry Lawsuits Predicted to be $15-$50 Billion
- Judicial Settlement Fund Paying Lawsuits
- Need Non-Political Solution
- Solution is Private/Public Partnership
DOE Complex Clean-Up

- 17 Sites Cleaned Up So Far
- Big Sites Remaining: Hanford, SRS, INL, Oakridge
- Large Amounts of High Level Waste
- Solution for Clean Up is the Same: Geologic Repository
State Legislators Can Drive Solution

- Understanding Clean Up Issues
- Close Interaction with their Congressional Delegations
- All being on the Same Page