Drought Preparedness

Warren Lasher
Director of System Planning
ERCOT

June 26, 2014
The Texas Legislature restructured the Texas electric market in 1999 by unbundling the investor-owned utilities and creating retail customer choice in those areas, and assigned ERCOT four primary responsibilities:

- **System Reliability** - Ensure reliability and adequacy of regional electric network
- **Open Access to Transmission** - Ensure nondiscriminatory access to transmission/distribution systems for all buyers and sellers
- **Competitive Retail Market** - Facilitate retail registration and switching
- **Competitive Wholesale Market** - Ensure accurate accounting for electricity production and delivery among the generators and wholesale buyers and sellers in the region

**QUICK FACTS**

- 75% of Texas land
- 85% of Texas load
- More than 41,500 miles of transmission lines
- 550+ generation units
- 68,305 MW peak demand (set August 3, 2011)

**ERCOT connections to other grids are limited to direct current (DC) ties, which allow control over flow of electricity**
ERCOT Annual Energy and Peak Demand (2003-2013)

10-year Growth
Energy - 16.4%
Peak Demand - 12%
Water Use in Texas by Use Type (2010)

Adapted from TWDB 2010 Water Use Survey Estimates
## 2014 Summer SARA (Final)

<table>
<thead>
<tr>
<th>Item</th>
<th>Summer 2014</th>
<th>Forecasted Season Peak Load</th>
<th>Extreme Load/Typical Generation Outages</th>
<th>Extreme Load/Extreme Generation Outages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Total Resources</td>
<td>73,910</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Peak Demand</td>
<td>68,096</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Uses of Reserve Capacity</td>
<td>2,854</td>
<td>5,167</td>
<td>7,862</td>
</tr>
<tr>
<td>4</td>
<td>Capacity Available for Operating Reserves* (1-2-3)</td>
<td>2,960</td>
<td>647</td>
<td>(2,048)</td>
</tr>
<tr>
<td>5</td>
<td>Capacity Available for Operating Reserves** after August 1</td>
<td>5,113</td>
<td>2,800</td>
<td>105</td>
</tr>
</tbody>
</table>

- Tight reserves at start of summer
- Reduced likelihood of scarcity conditions by late summer

*Less than 2,300 MW indicates risk of an Energy Emergency Alert
**Additional 2,153 MW to be operational by Aug. 1
Comparing Mid-June Drought Conditions

- Current drought began in October 2010.
- A dry winter/early-spring has resulted in deteriorating conditions over the past four months, especially West.
- PDO has gone positive and some hints of El Nino developing mid-to-late summer. Some cautious potential for wetter conditions later this year.
• Overall, slightly hotter than normal* for ERCOT as a whole
• More opportunities for above normal temperatures West rather than East.
• Not hotter than any of the past four summers (all were top 25)
• More potential for cooler rather than warmer.

• Below normal precipitation expected for the majority of the western half to two-thirds of the state.
• Best opportunities for above normal rainfall within ERCOT will fall within the East, Coast, and eastern North zones.

*10 year normal (2004-2013)
Lake Levels Risk Analysis

Legend
Reservoir Percentage June 2014
- 0% - 20%
- 21% - 40%
- 41% - 60%
- 61% - 80%
- 81% - 100%

Net Generation (2011 MWh)
- 100,000 - 1,000,000
- 1,000,000 - 2,500,000
- 2,500,000 - 5,000,000
- 5,000,000 - 10,000,000
- > 10,000,000
We are engaged on drought issues

• SB 662 (83R) added ERCOT and the Public Utility Commission to the Drought Preparedness Council

• ERCOT hosted a drought preparedness workshop for generators and transmission owners

• ERCOT has employees focused on resource adequacy issues, including water supply and environmental issues. ERCOT also has a meteorologist on staff.

• ERCOT is in frequent communication with resource owners about water availability and other issues

• ERCOT has developed a drought risk-assessment tool that is used to track the potential near-term impacts of drought conditions

• ERCOT has incorporated drought issues into the near-term and long-term resource adequacy reports
Improving communications with consumers

**ERCOT website – added features**
- **Today’s Outlook**: Hourly generation and load information
- **Weather page**: Daily, seasonal

**Social media – join us!**
- Twitter: 5,500+ followers
- Facebook: 1,400+ friends
- LinkedIn: 2,507 followers

**ERCOT Energy Saver mobile app – upgraded**
- System conditions – hourly and real-time updates
- Wholesale pricing information – Hubs and Load Zones
- Other improved features and information sharing