ERCOT UPDATE

SENATE BUSINESS AND COMMERCE
JULY 10, 2012

Trip Doggett
President & CEO
ERCOT
WHAT TO EXPECT THIS SUMMER

- ERCOT expects tight reserves this summer. There is a significant chance that ERCOT will need to declare an Energy Emergency Alert (EEA) on multiple occasions during the summer of 2012. However, these EEA declarations are not likely to result in the need for rotating outages.

- If a higher-than-normal number of forced generation outages occur during a period of high demand, or if record-breaking weather conditions similar to last summer lead to even higher-than-expected peak demands, the ERCOT system is likely to have insufficient resources available to serve those demands. This insufficiency would result in the need for rotating outages to maintain the integrity of the system as a whole.

- Drought conditions have improved during the winter and spring on many river basins. Reservoir levels are not expected to drop below power plant physical intake limits during summer 2012, but potential risks exist under ongoing drought conditions.
# Lake Levels Update – 01 June 2012

<table>
<thead>
<tr>
<th>Surface Water &amp; (MW)</th>
<th>*Level @ Full Conservation Pool</th>
<th>*Level on Jan 1, 2011</th>
<th>*Level on Oct 7, 2011</th>
<th>*Level on June 01, 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake Texana (56)</td>
<td>44.50</td>
<td>41.00</td>
<td>32.81</td>
<td>43.00</td>
</tr>
<tr>
<td>Bardwell Lake (312)</td>
<td>421.00</td>
<td>420.71</td>
<td>416.23</td>
<td>420.96</td>
</tr>
<tr>
<td>Lake Colorado City (407)</td>
<td>2,070.20</td>
<td>2057.33</td>
<td>2052.4</td>
<td>2051.46</td>
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<tr>
<td>Lake Ray Hubbard (916)</td>
<td>435.50</td>
<td>432.37</td>
<td>429.22</td>
<td>434.92</td>
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<tr>
<td>Lake Granbury (983)</td>
<td>693.00</td>
<td>691.90</td>
<td>686.27</td>
<td>691.70</td>
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<tr>
<td>Lake Houston (1016)</td>
<td>41.73</td>
<td>42.10</td>
<td>36.76</td>
<td>41.52</td>
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<tr>
<td>Twin Oaks Reservoir (1616)</td>
<td>400</td>
<td>398.87</td>
<td>398.27</td>
<td>400.32</td>
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<tr>
<td>Lake Limestone (1689)</td>
<td>363</td>
<td>359.03</td>
<td>354</td>
<td>362.15</td>
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<tr>
<td>Martin Lake (2425)</td>
<td>306</td>
<td>300.48</td>
<td>295.06</td>
<td>301.85</td>
</tr>
</tbody>
</table>

* In Feet above Mean Sea Level
Annual Energy & Peak Demand (2003-2011)

Total 9-year Growth
Energy – 17.5%
Peak Demand – 13.8%
**Firm Load Forecast**

**Resources**

**Firm Load Forecast + 13.75% Reserve**

*FIS = Full Interconnection Studies*
ERCOT commissioned *The Brattle Group* to address three questions:

1. **Investors and their Investment Criteria**
   - Identify, describe, and rank the relevant factors that influence investment decisions made by the development and financial community related to new capacity additions, capacity retirements, and repowering projects in ERCOT.

2. **Market Outlook for Investment and Resource Adequacy**
   - Evaluate the current drivers from both a wholesale and retail perspective that influence resource investment decisions in the ERCOT market.

3. **Evaluation of Policy Options**
   - Provide suggestions for ways to enhance favorable investment outcomes for long-term resource adequacy in ERCOT.
New investment in ERCOT is impeded by low wholesale prices, low natural gas prices, and an efficient existing generation fleet.

ERCOT’s current energy-only market is not likely to support sufficient investment to meet the resource adequacy target.

Reliability targets could be achieved with a significant increase in price-responsive demand – would likely take several years before a sufficient level of demand response could be achieved.

Based on large and uncertain gaps, either the market design needs to be adjusted or the reliability objectives revised.

Four policy options for attracting greater investment to support a higher reserve margins:
- Energy-only market with price adders
- Energy-only market with backstop procurement
- Resource adequacy requirements on load serving entities
- Resource adequacy supported by a centralized forward capacity market

Miscellaneous market design enhancements to better enable demand-side resources to participate, and to achieve efficient pricing during scarcity and non-scarcity conditions.
Reserve Margin

- Examine the philosophy and reliability targets of other ISOs/RTOs
- Prepare a simplified explanation of the current process of Reserve Margin iterations and sensitivity analysis in ERCOT

PUC Workshop - July 27

- Prepare cost and schedule information to implement proposed changes to
  - Power Balance Penalty Curve
  - Offer Caps
- Discuss system changes, cost and schedule information to incorporate loads in SCED
Expansion of Demand Response

• Maintain focus on implementation of
  – Indicative pricing functionality
  – 10 min ERS expansion including small generators
  – 30 min ERS pilot

• Identify barriers and challenges to allow participation of aggregated Load resources in ERCOT Markets
  – Qualify aggregated Loads to provide Ancillary Services

• Work with TDSPs to coordinate Load Management programs

• Work with REPs to promote retail market DR products
  – Evaluate opportunities to leverage AMI technology
**First Interconnection Agreement for a CREZ Substation**

- Transmission Plan designed to serve approximately 18GW:
  - ~4600 circuit miles of 345 kV
  - $6.7 billion project cost
- All line certification cases completed
  - Construction underway
  - All lines expected to be complete by end of 2013
- Lines are open-access; use not limited to wind

- Completed March 27, 2012, between Wind Energy Transmission Texas and Stephens Ranch Wind Energy
- Interconnection point is the Long Draw Substation in Borden County
- Wind farm will include 233 turbines for total of 377 MW
- Scheduled for commercial operations in November 2013
LOWER RIO GRANDE VALLEY PROJECT

• **Driver – Reliability Need**

• **Project Components**
  – Lobo-Rio Bravo-N. Edinburg 163 mile single circuit 345 kV line on double circuit structures with 50% series compensation
  – Energized reconductor of Lon Hill-N. Edinburg and Lon Hill-Rio Hondo 345 kV lines
  – Reconfigure N. Edinburg and Rio Hondo series capacitors

• **Cost Estimate** - $527 million

• **Expected in-service** - 2016
**Cross Valley 345kV Project**

- **Driver – Reliability Need**
- **Project Components:**
  - New La Palma-Palo Alto 138 kV line (~12 miles) with a rating of at least 215 MVA
  - New North Edinburg-Loma Alta 345 kV line (double circuit capable with one circuit in place) routed in proximity to the existing South McAllen Substation (~106.5 miles)
  - New 345kV bus at the Loma Alta station with one 345/138kV autotransformer
- **Cost estimate = $274.7M**
- **Expected in-service - 2016**
OUTREACH: ERCOT MOBILE APP GIVES REAL TIME GRID UPDATES

ERCOT Mobile App
- iPhone and Android Phone users
- Pop up notifications
- Applications for first release
  - Conservation Spotlight
  - Load Forecast versus Actual graph
  - ERCOT Conservation Tips
  - ERCOT Quick Facts

ERCOT Quick Facts
- 85% of Texas electric load
- 40,530 circuit miles of high-voltage (138 kV/345 kV) transmission
- 550 generation units
- 73,600 MW peak capacity
- 68,379 MW record peak demand
- 335 billion kWh energy produced (2011)

Primary responsibilities (from Texas Legislature)
- System reliability (planning and operations)
- Open access to transmission
- Retail switching process for customer choice
- Wholesale market settlement for electricity production and delivery

Wind power leader
- 9,600 MW capacity (most in nation)
- 2,000 MW coastal wind power (on-peak availability)