Item 4.1: CEO Update

Bill Magness
President & CEO
ERCOT

Board of Directors Meeting

ERCOT Public
August 8, 2017
CEO Update: Variance to Budget ($ in Millions)
Net Revenues After Department Expenditures

Net Revenues Year to Date Actuals: $3.4 M Favorable (as of June 30, 2017)

**Major Revenue Variances**
$2.1 M under budget: system administration fees unfavorable due to mild weather

**Major Expenditure Variances**
$1.8 M under budget: interest expense due to project funding and no revolver usage; interest income due to higher rates
$0.7 M under budget: computer hardware and equipment purchases
$0.4 M over budget: resource management ($-1.0 M staff backfill and augmentation; $0.5M project work, $0.1M staffing management)
$1.8 M under budget: timing differences

Net Revenues Year End Forecast: $4.5 M Favorable (as of July 26, 2017)

**Major Revenue Variances**
$0.8 M under budget: system administration fees unfavorable based on current actuals and load forecast for remainder of year

**Major Expenditure Variances**
$3.1 M under budget: interest expense due to project funding and minimal revolver usage; interest income due to higher rates
$1.0 M under budget: computer hardware and equipment purchases
$0.5 M over budget: resource management ($-2.1 M staff backfill and augmentation; $0.8 M project work; $0.8 M staffing management)
2017 Off-Cycle & R4 Release Summary

- **August 1, 2017 Go-Live**
  - NPRR809: GTC or GTL for New Generation Interconnection
    - GTC = Generic Transmission Constraint
    - GTL = Generic Transmission Limit
  - PGRR052: Stability Assessment for Interconnecting Generation
  - PGRR054: Stability Limits in the Full Interconnect Study

- **R4 Release Dates: August 29-31, 2017**
  - 130 Change Requests across the application areas
  - NPRRs
    - NPRR758: Improved Transparency for Outages Potentially Having a High Economic Impact
    - NPRR775: Enhanced Implementation of Limits for Fast Responding Regulation Service
  - R4 impacted functional areas:
    - Congestion Revenue Rights, Data and Information Products, Data Management & Governance, Energy Management System, Enterprise Integration Nodal Services, Market Management System, Market Settlements, Outage Scheduling, Web Communications
Summer Operations So Far

Monthly Demand Records (June and July)*
- June 23: Broke previous monthly records three hours
  New June record: 67,617 MW (4-5 p.m.)
- July 20: Broke previous records twice (2-3 p.m.; 3-4 p.m.)
- July 28: Broke that record two consecutive hours
  New July record: 69,525 MW (4-5 p.m.)
- July 29: Broke previous weekend demand record twice
  New weekend record: 68,413 MW (4-5 p.m.)
* New records are preliminary, subject to change in final settlement.

Notices and Advisories (May and June)
- No EEAs or transmission emergencies
- 11 Advisories (including 7 for PRC <3,000 MW)
- 2 OCNs (Capacity insufficiency and Tropical Storm Cindy)
- 9 Watches (all related to DC Ties)

Reliability Unit Commitments
- Decreased considerably since 2016
Reliability Unit Commitments Down from 2016

The graph illustrates the comparison of RUC (Reliability Unit Commitments) for 2016 and 2017. The y-axis represents RUC Commitments in effective unit-hours, while the x-axis indicates the months from January to December. The graph shows a noticeable decrease in RUC Commitments for both years, with 2017 having consistently lower values than 2016, except for a peak in July for both years.
## Of Note from Operations Report (May and June)

<table>
<thead>
<tr>
<th>Metric</th>
<th>Trending as Expected</th>
<th>Further Information</th>
</tr>
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</table>
| Hourly Reliability Unit Commitment (HRUC) Monthly Summary | Yes | • Capacity committed by the HRUC process indicates the level of out-of-market activity needed during the Operating Day to maintain reliability  
• 7 Resources were committed in May to resolve congestion and capacity shortage.  
• 14 Resources were committed in June to resolve congestion and voltage stability |
| Supplemental Ancillary Service Market Monthly Summary | Yes | • Normal trend indicates that infeasibility was not a major concern |
| Non-Spinning Reserve Service Deployment | Yes | • Non-Spin was deployed on May 15 & 16 for voltage support.  
• Non-Spin was deployed on June 2 for voltage support and June 19 for congestion |
| Congestion Revenue Rights Price Convergence | No | • Recent trends in CRR show day-ahead values significantly above auction costs. Higher-than-expected congestion in the Day-Ahead Market is the main driver. |
## Of Note from Operations Report (June)

<table>
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<tbody>
<tr>
<td>Retail Transactions</td>
<td>Yes</td>
<td>• Seasonal variations in transaction volumes trending as expected</td>
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<td>Advanced Metering</td>
<td>Yes</td>
<td>• 99.0% of ERCOT load settled with 15-minute interval data.</td>
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<td>• 7.0M Advanced Metering System (AMS) Electric Service Identifier (ESIID)s included in settlement as of June 2017.</td>
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<td>Settlement Dollars</td>
<td>Yes</td>
<td>• As of settlement of Operating Day 06/30/2017, the daily average settlement dollars for June are $17.23M, which is up from $17.19M in May 2017 and up from June 2016 which had an average of $13.62M.</td>
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<td>Revenue Neutrality</td>
<td>Yes</td>
<td>• As of settlement of Operating Day 06/30/2017, Revenue Neutrality uplift is a charge of $10.36M, which is up from May 2017 which was a charge of $8.76M and up from June 2016 which was a credit of $1.55M.</td>
</tr>
<tr>
<td>Market-Based Uplift to Load</td>
<td>No</td>
<td>• As of settlement of Operating Day 06/30/2017, the market-based uplift was a credit of $13.64M, as opposed to a charge of $12.09M in May 2017 and a credit of $1.36M in June 2016. This is mainly due to a $24.2M credit to Load via the CRR Balancing Account. Higher-than-expected congestion in the Day-Ahead Market has been the main driver of the higher-than-expected CRR Balancing Account balance.</td>
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Congestion Revenue Rights Prices and Account Surplus

- Both items highlighted in Operations Report are related to a CRR Balancing Account balance that is higher than expected, resulting in a $24.2 million credit to load in June.

- Main driver: Higher-than-expected congestion in the Day-Ahead Market
  - Significant congestion in all Load Zones, particularly in the South and along paths between the North and Houston zones
  - Contributors include high load, planned and unplanned outages.
  - CRR funding was not a concern.

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Monthly DAM Congestion Rent\(^1\) for the Past Three Junes

\(^1\) DAM Congestion Rent as defined in Nodal Protocol 7.9.3.1(2)
Sharing Expertise and Insight

- U.S. House Energy & Commerce Committee is holding a series of hearings on “Powering America: A Review of the Operation and Effectiveness of the Nation’s Wholesale Electricity Markets”
- On July 26, Senior VP & COO Cheryl Mele represented ERCOT on a witness panel that included all the U.S. ISOs and RTOs.

ERCOT engineers played a leading role at IEEE’s annual meeting of power engineers from all over the world, July 16-20 in Chicago.

**Presented papers**
Connor Anderson
Cong Liu

**Chaired panels**
Pengwei Du
Julie Jin

**Presented on panels**
Bill Blevins, Pengwei Du, Fred Huang
Sun Wook Kang, John Schmall, Sandip Sharma
Recent Texas PUC Orders and Filings

• On July 28, the Commission approved the third terms for Unaffiliated Directors Craven Crowell, Judy Walsh and Karl Pfirrmann.

• On July 20, ERCOT submitted its 2018-2019 budget and fee request, as approved by the Board in June, to the Commission.

• On July 14, ERCOT responded to Commission requests for a cost estimate on Real-Time Co-optimization and updates on several market-related issues.

• On Aug. 10, the Commission will host a workshop to discuss various proposals for future market enhancements.
Coming Attractions

• Solar Eclipse Aug. 21
  – Impact in ERCOT region likely minimal – 600 MW over 1-1.5 hours (more impacts north of Texas)
  – Solar forecast and Ancillary Services will address expected impact.

• Reactive Power Coordination
  – Launched stakeholder discussions in July 24 workshop

• Retail System Upgrade
  – Addressing needed updates to retail systems (hardware, software)
  – Working to keep Retail Electric Providers aware of system impacts
The Network Model Management System (NMMS) contains modeling data used for all ERCOT applications that require a network model: EMS, MMS, System Planning, CRR, Outage Coordination, and Settlements and Billing.

Just completed final stabilization of first-ever upgrade of this critical system.