Item 4.3: Operations Report
(September & October 2014)

H.B. "Trip" Doggett
President & Chief Executive Officer

Board of Directors Meeting
ERCOT Public
December 9, 2014

Summary – September 2014

Operations

- The peak demand of 64,397 MW on September 10th was greater than the mid-term forecast peak of 63,154 MW as well as the September 2013 actual peak demand of 63,388 MW. The instantaneous peak load on September 10th was 64,640 MW.
- Day-ahead load forecast error for September was 2.43%.
- ERCOT issued 4 notifications.
  - A single OCN due to projected capacity shortage.
  - A single advisory due to ERCOT's Real-Time Contingency Analysis and State Estimator tools not solved for more than 15 minutes.
  - A single advisory for a geomagnetic disturbance storm of K-7 or higher.
  - A single advisory due to ERCOT's Voltage Security Assessment Tool (VSAT) being unavailable.

Planning Activities

- 236 active generation interconnection requests totaling over 64,700 MW, including 25,800 MW of wind generation as of September 30, 2014. Six additional requests and 1,900 more MW from August 31, 2014.
- 11,515 MW wind capacity in commercial operations on September 30, 2014.

Summary – October 2014

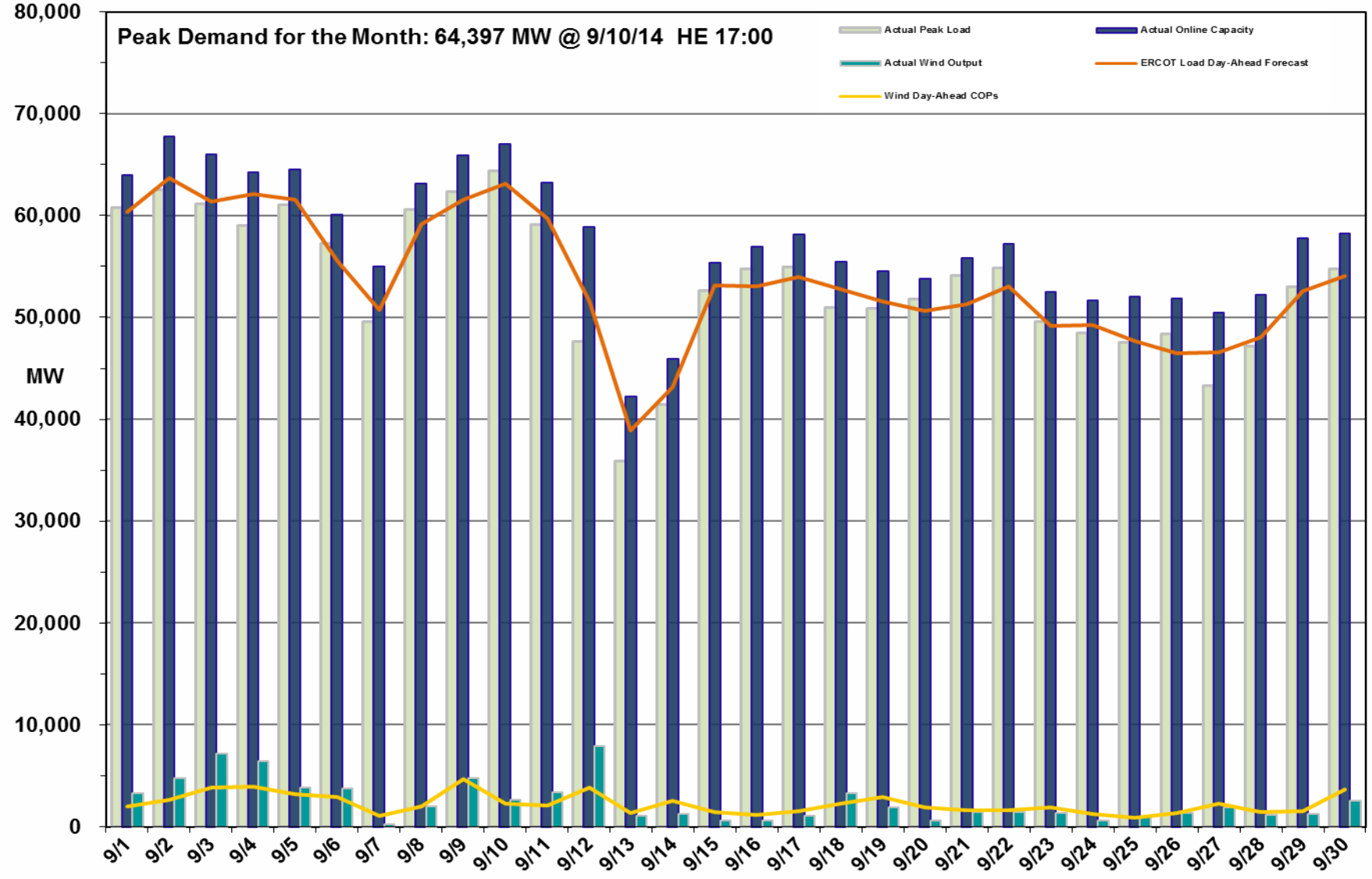
Operations

- The peak demand of 58,421 MW on October 1st was greater than the mid-term forecast peak of 55,171 MW as well as the October 2013 actual peak demand of 54,710 MW. The instantaneous peak load on October 1st was 58,603 MW.
- Day-ahead load forecast error for October was 2.40%.
- ERCOT issued two notifications.
  - A single emergency notice in the Rio Grande Valley due to forced outages causing low voltages.
  - A single emergency notice in the Rio Grande Valley due to forced outages causing the Reliability Margin to fall below 95 MW.

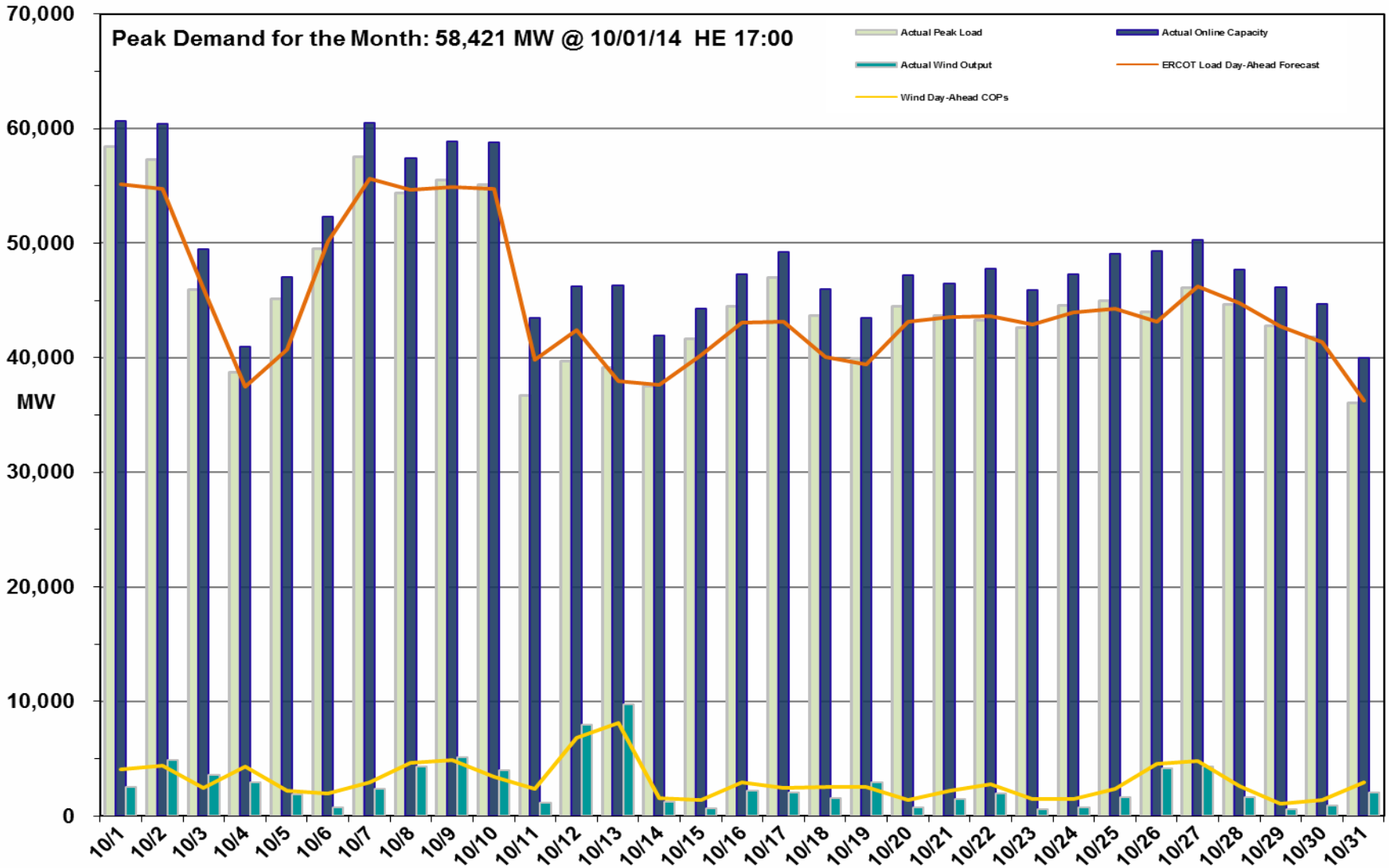
Planning Activities

- 236 active generation interconnection requests totaling over 63,100 MW, including 25,500 MW of wind generation as of October 31, 2014. The same number of requests and 1,600 fewer MW from September 30, 2014.
- 11,493 MW wind capacity in commercial operations on October 31, 2014.

Daily Peak Demand: Hourly Average Actual vs. Forecast, Wind Day-Ahead COPs & On-line Capacity at Peak – September 2014



Daily Peak Demand: Hourly Average Actual vs. Forecast, Wind Day-Ahead COPs & On-line Capacity at Peak – October 2014



Market Statistics – September 2014

Market Statistics	September 2013	September 2014	2013 Average	2014 YTD Average
Percentage of Real-Time load hedged in Day-Ahead Market	119.04%	118.06%	121.18%	122.40%
Average 'ERCOT Hub Average 345 kV Hub' Settlement Point Price in Day-Ahead Market ($/MWh)	36.54	36.00	34.14	43.02
Average 'ERCOT Hub Average 345 kV Hub' Settlement Point Price in Real-Time ($/MWh)	40.55	34.53	32.45	41.20

Market Statistics – October 2014

Market Statistics	October 2013	October 2014	2013 Average	2014 YTD Average
Percentage of Real-Time load hedged in Day-Ahead Market	129.74%	126.01%	121.18%	122.76%
Average 'ERCOT Hub Average 345 kV Hub' Settlement Point Price in Day-Ahead Market ($/MWh)	33.26	37.21	34.14	42.47
Average 'ERCOT Hub Average 345 kV Hub' Settlement Point Price in Real-Time ($/MWh)	36.77	34.23	32.45	40.54

Operational Performance Measures – Sep. & Oct. 2014

Performance Measure	Target Met	Further Information
Retail Transaction Performance *(Target 98%)*	*Yes*	• Retail transaction processing performance was near 100%
Settlements Performance *(Target 99%)*	*Yes*	• 100% timely statement and invoice posting

Operational Dashboard – September & October 2014

Metric	Trending as Expected	Further Information
Day-Ahead Schedule	*Yes*	• Normal level of market activity and liquidity • Loads appear to have hedged against exposure to Real-Time prices
Day-Ahead Electricity And Ancillary Service Hourly Average Prices	*Yes*	• Hourly average prices correctly reflect the opportunity cost of energy
Day-Ahead vs Real-Time Load Zone Settlement Point Price (Hourly Average)	*Yes*	• Day-Ahead & Real-Time prices for different Load Zones reflect relative transmission congestion
Day-Ahead vs Real-Time Trading Hub Settlement Point Price (Hourly Average)	*Yes*	• The average energy price across the system reflects marginal offers and scarcity pricing impacts • Higher average Day-Ahead energy prices reflect the risk premium between Day-Ahead & Real-Time
Day-Ahead Reliability Unit (DRUC) Commitment Monthly Summary	*Yes*	• Capacity committed by the DRUC process indicates the level of out of market activity needed Day-Ahead to maintain reliability • No resource was committed in DRUC in this period

Operational Dashboard – September 2014

Metric	Trending as Expected	Further Information
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 • 1 resource was committed in September and 6 resources were committed in October to help resolve congestion
Supplemental Ancillary Service Market Monthly Summary	*Yes*	• Normal trend indicates that deliverability was not a major concern
Non-Spinning Reserve Service Deployment	*Yes*	• Offline Non-Spin was not deployed
Congestion Revenue Rights Price Convergence	*Yes*	• Normal trend indicates good ability of market participants to estimate value of hedges

Operational Dashboard – October 2014

Metric	Trending as Expected	Further Information
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 • 1 resource was committed in September and 6 resources were committed in October to help resolve congestion
Supplemental Ancillary Service Market Monthly Summary	*Yes*	• Normal trend indicates that deliverability was not a major concern
Non-Spinning Reserve Service Deployment	*Yes*	• Offline Non-Spin was not deployed
Congestion Revenue Rights Price Convergence	***No***	• The total CRR value was about 3.44 times of the total CRR cost in October; CRRs were valued much higher in Day-Ahead due to higher than expected loads in the valley and an outage in the Houston area that was not modelled in the monthly CRR auction.

Real-time prices were impacted from 10/06/2014 – 10/17/2014 due to an error in implementing a fuel adder (NPRR485). This resulted in an incorrect reduction in real-time prices during some intervals. This matter is scheduled to be considered by the Board at the 2014 December Board Meeting.

Operational Dashboard – September 2014

Metric	Trending as Expected	Further Information
Retail Transactions	*Yes*	• Seasonal variations in transaction volumes trending as expected.
Advanced Metering	*Yes*	• 98.4 % of ERCOT load settled with 15-minute interval data. • 6.6M Advanced Metering System (AMS) Electric Service Identifier (ESIID)s included in settlement as of September 2014.
Settlement Dollars	*Yes*	• As of settlement of Operating Day 09/30/2014, the daily average settlement dollars for September are $13.12M, which is down from $14.99M in August 2014 and from September 2013 which had an average of $14.11M.
Revenue Neutrality	*Yes*	• As of settlement of Operating Day 09/30/2014, Revenue Neutrality uplift is a charge of $7.90M, which is up from a $3.83M charge in August 2014 and up from a $4.63M charge in September 2013.
Market-Based Uplift to Load	*Yes*	• As of settlement of Operating Day 09/30/2014, the market-based uplift to load is a charge of $12.80M, as opposed to a $10.30M charge in August 2014 and a charge of $12.75M in September 2013.

Operational Dashboard – October 2014

Metric	Trending as Expected	Further Information
Retail Transactions	*Yes*	• Seasonal variations in transaction volumes trending as expected.
Advanced Metering	*Yes*	• 98.3% of ERCOT load settled with 15-minute interval data. • 6.6M Advanced Metering System (AMS) Electric Service Identifier (ESIID)s included in settlement as of October 2014.
Settlement Dollars	*Yes*	• As of settlement of Operating Day 10/31/2014, the daily average settlement dollars for October are $15.96M, which is up from $13.12M in September 2014 and from October 2013 which had an average of $13.07M.
Revenue Neutrality	*Yes*	• As of settlement of Operating Day 10/31/2014, Revenue Neutrality uplift is a charge of $1.42M, which is down from September 2014 which was a charge of $7.90M and down from October 2013 which was a charge of $3.68M.
Market-Based Uplift to Load	*Yes*	• As of settlement of Operating Day 10/31/2014, the market-based uplift was a charge of $24.26M, as opposed to a charge of $12.80M in September 2014 and a charge of $15.02M in October 2013.

Market Enhancements Under Consideration

Enhancement	Further Information

Evaluating market design improvement proposals	• RUC price floor changed from $1,000/MWh to $1,500/MWh
	  • The price floor change from NPRR 626 went into effect on 10/1/2014
	• Operating Reserve Demand Curve (ORDC)
	  • ERCOT is working with stakeholders to improve the ORDC design
	• Future Ancillary Services Team (FAST) Activity
	  • NPRR 667 was posted on 11/18/2014
	  • Brattle will be the vendor for the Cost Benefit Analysis (CBA) on the Future Ancillary Services framework
	  • CBA analysis is anticipated to be completed by late Spring 2015

Evaluating Pilot Project Feasibility	• No current pilot projects

Major Project Highlights (as of 11/19/2014)

Project	Trending as Expected	Further Information
EMS Upgrade – Upgrade EMS and OTS from ALSTOM EMP 2.3 to EMP 3.0	*Yes*	• The project is currently in Execution Phase and tracking to the approved schedule and budget • Early Development: Operator Training Simulator (OTS) code migration complete • Other development/testing work completed or in progress: ○ Development platform update and merge to product Service Pack 4 complete ○ Load Frequency Control and related subsystem detailed testing complete ○ As built Load Frequency Control design document update complete ○ Network Analysis Phase 2 development in progress; development of a subset of applications complete ○ Operator Training Simulator (OTS) – display conversion tasks in progress ○ Load Forecast, Scada and ETS (CIM Importer) – previously completed and in maintenance ○ Finalization and review of Development and Factory Acceptance Testing platforms in preparation for infrastructure build out (this is a partial and early build pending enterprise level hardware technology finalization)
NMMS Upgrade – Replace the current Siemens NMMS application with the next generation of model management software available from Siemens	*Yes*	• The project is in the final stages of Planning and continues to target December for the start of the Execution Phase • Current Planning activities the team is wrapping up include: ○ Vendor detail design deliverables – final delivery was delayed in order for vendor to provide additional detailed modifications; timeline was also impacted by vendor resource availability, however, the final documents are targeted for delivery in November. ○ Execution Phase plan – ERCOT and the vendor continue work to produce the Execution Phase detailed schedule and resource plan. These deliverables, along with the final total estimated cost, will be finalized in December.

Major Project Highlights (as of 11/19/2014) – continued

Project	Trending as Expected	Further Information
Settlement System Upgrade – Replace proprietary code, data structures and tools with an ERCOT supported solution	*Yes*	• Go-live of Settlements and Billing (S&B) functionality continues on track for production with Release 6 in December ○ Development for the application replacement is complete ○ Functional acceptance testing and performance testing activities are complete. ○ Full integration testing is currently in progress • The project is also on schedule with two NPRRs that have been incorporated into the scope of delivery with Release 6. Both are currently in integration testing and will be included with the December deployment ○ NPRR580, Congestion Revenue Rights Credit Calculations & Payments ○ NPRR467, Balancing Account resettlement Due to DAM Resettlement
ABB MMS/OS Technology Refresh – Improve ERCOT's ability to support and maintain the Market Management System (MMS) and Outage Scheduler (OS) system by upgrading the underlying infrastructure and its required components to versions on mainstream vendor support	*Yes*	• Project currently in the Execution phase and proceeding as planned ○ All the 'new' hardware and 3rd party software currently running in lower environments (development, functional and integration testing) ○ The upgraded MMS and OS releases are running on development and test environments. Testing is progressing as expected • Other ERCOT milestones include: ○ Successful upgrade of the database for the Integration Testing environment ○ Completion of documented test procedures to be used for Functional, Integration, Non Functional and Load testing
Market System Enhancements 2015: NPRR626 – Reliability Deployment Price Adder	*Yes*	• Project is currently in the Planning phase and is exploring options to deliver a quality solution in an expeditious manner ○ The team is currently documenting the requirements associated with NPRR626, Reliability Deployment Price Adder, so that a design can be finalized and a target delivery can be communicated in January 2015 ○ Along with NPRR626 analysis, the team will also analyze the requirements and design needs of several NPRRs that support Phase II changes to the Operating Reserve Demand Curve (ORDC) ○ The impacts to the NPRR626 delivery timeline will also be known in January 2015 so that a final scope of delivery is confirmed for the Execution phase

Appendix

The *ERCOT Monthly Operational Overview* is posted on or about the 15th of the following month to (http://www.ercot.com/committees/board/)