Item 10.3: Operations Report
(November & December 2014)

H.B. "Trip" Doggett
President & CEO

Board of Directors Meeting
ERCOT Public
February 9-10, 2015

Summary – November 2014

Operations

- The peak demand of 50,677 MW on November 17th was greater than the mid-term forecast peak of 47,357 MW, as well as greater than the November 2013 actual peak demand of 46,931 MW. The instantaneous peak load on November 17th was 51,186 MW.
- Day-ahead load forecast error for November was 2.71%.
- ERCOT issued four notifications
  - One OCN due to cold weather (11/10)
  - Two advisories for cold weather (11/12 and 11/14)
  - One watch for cold weather (11/16)

Planning Activities

- 239 active generation interconnection requests totaling over 62,800 MW, including 24,100 MW of wind generation as of November 30, 2014. Three additional requests, yet 300 fewer MW from October 31, 2014.
- 11,703 MW wind capacity in commercial operations on November 30, 2014.

Summary – December 2014

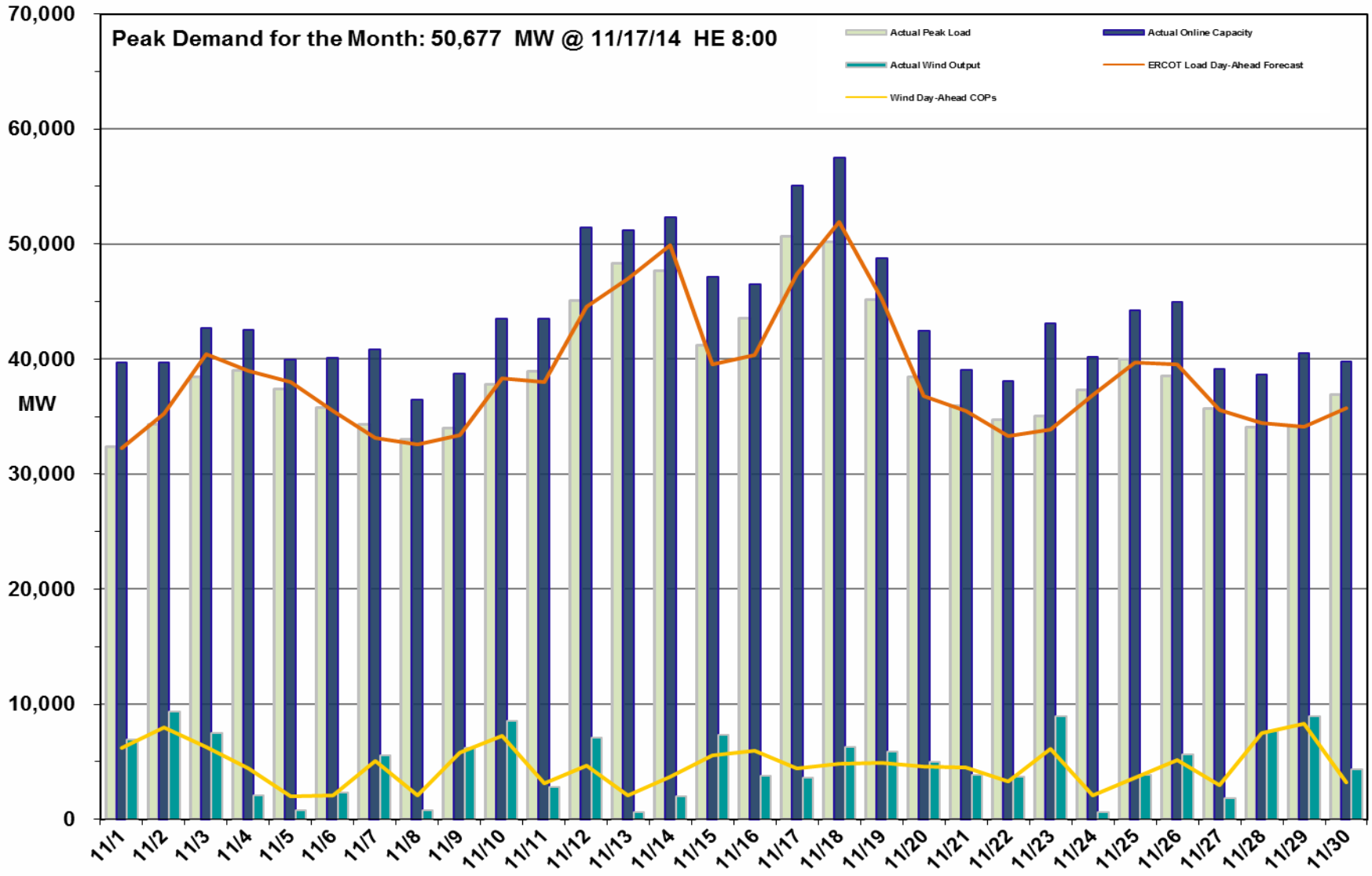
Operations

- The peak demand of 48,201 MW on December 31st was greater than the mid-term forecast peak of 47,019 MW of the same operating period. However, it was less than the December 2013 actual peak demand of 53,690 MW. The instantaneous peak load on December 31st was 48,630 MW.
- Day-ahead load forecast error for December was 2.15%.
- ERCOT issued four notifications
  - Two advisories due to delays in DAM Solution (12/11 and 12/17)
  - OCN due to cold weather (12/29)
  - Advisory due to cold weather (12/30)

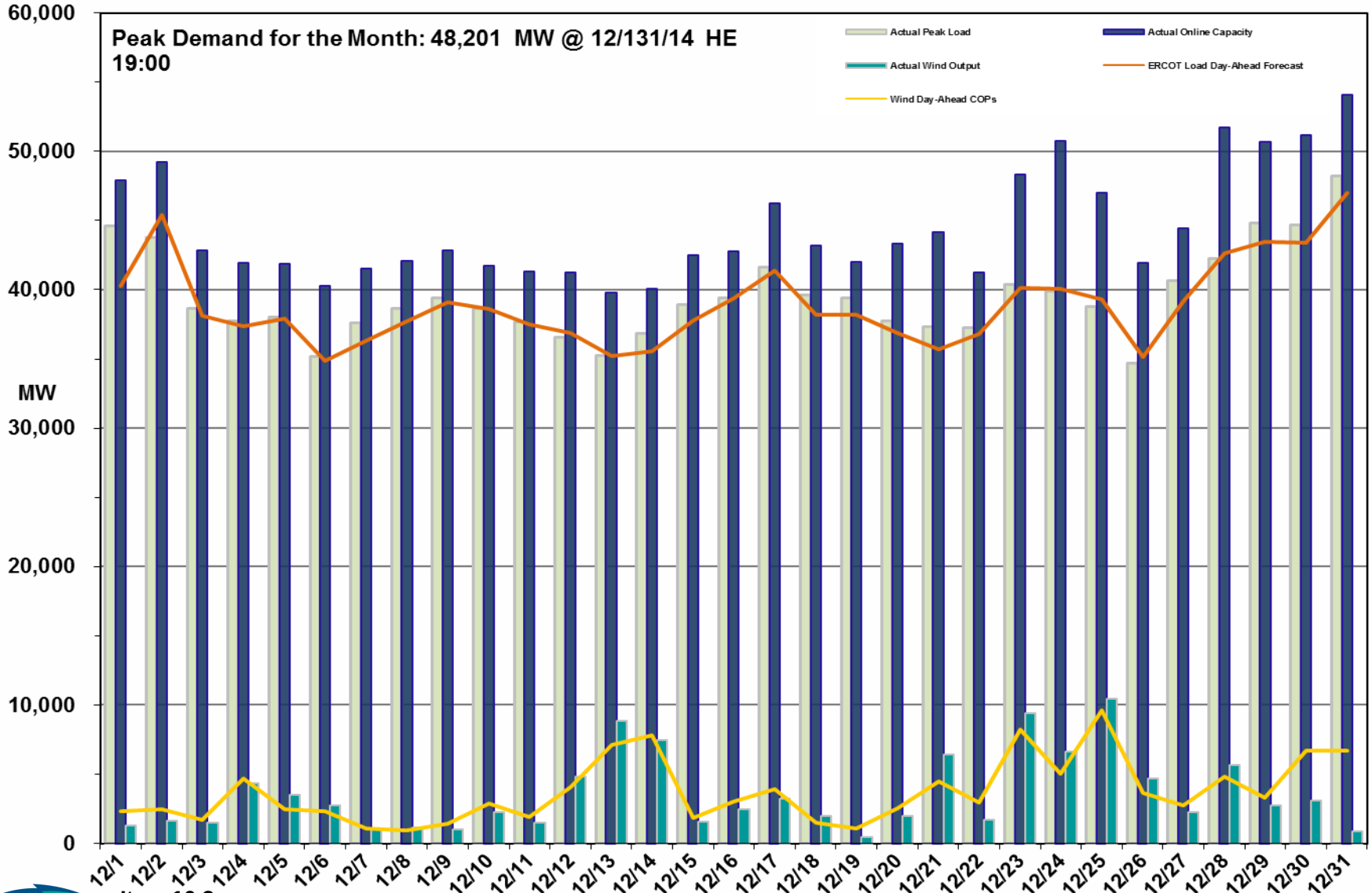
Planning Activities

- 239 active generation interconnection requests totaling over 62,000 MW, including 23,900 MW of wind generation as of December 31, 2014. The same amount of requests, yet 800 fewer MW from November 30, 2014.
- 12,470 MW wind capacity in commercial operations on December 31, 2014.

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



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



Market Statistics – November 2014

Market Statistics	November 2013	November 2014	2013 Average	2014 YTD Average
Percentage of Real-Time load hedged in Day-Ahead Market	129.87%	131.37%	121.18%	123.54%
Average 'ERCOT Hub Average 345 kV Hub' Settlement Point Price in Day-Ahead Market ($/MWh)	31.55	35.76	34.14	41.94
Average 'ERCOT Hub Average 345 kV Hub' Settlement Point Price in Real-Time ($/MWh)	31.24	33.13	32.45	39.96

Market Statistics – December 2014

Market Statistics	December 2013	December 2014	2013 Average	2014 YTD Average
Percentage of Real-Time load hedged in Day-Ahead Market	129.14%	138.68%	121.18%	124.80%
Average 'ERCOT Hub Average 345 kV Hub' Settlement Point Price in Day-Ahead Market ($/MWh)	36.57	27.15	34.14	40.81
Average 'ERCOT Hub Average 345 kV Hub' Settlement Point Price in Real-Time ($/MWh)	33.52	25.83	32.45	38.87

Operational Performance Measures – Nov. & Dec. 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 – November & December 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 – November & December 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 • 9 resources were committed in November to resolve voltage stability and congestion, and 1 resource was committed in December 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 – November 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. • 6.7M Advanced Metering System (AMS) Electric Service Identifier (ESIID)s included in settlement as of November 2014.
Settlement Dollars	*Yes*	• As of settlement of Operating Day 11/30/2014, the daily average settlement dollars for November are $12.44M, which is down from $15.96M in October 2014 and up from November 2013 which had an average of $11.43M.
Revenue Neutrality	*Yes*	• As of settlement of Operating Day 11/30/2014, Revenue Neutrality uplift is a charge of $2.15M, which is up from a $1.42M charge in October 2014 and up from a $0.19M credit in November 2013.
Market-Based Uplift to Load	*Yes*	• As of settlement of Operating Day 11/30/2014, the market-based uplift to load is a charge of $34.56M, as opposed to a $24.26M charge in October 2014 and a charge of $13.47M in November 2013.

Operational Dashboard – December 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. • 6.7M Advanced Metering System (AMS) Electric Service Identifier (ESIID)s included in settlement as of December 2014.
Settlement Dollars	*Yes*	• As of settlement of Operating Day 12/31/2014, the daily average settlement dollars for December are $8.72M, which is down from $12.44M in November 2014 and from December 2013 which had an average of $11.78M.
Revenue Neutrality	*Yes*	• As of settlement of Operating Day 12/31/2014, Revenue Neutrality uplift is a charge of $0.51M, which is down from November 2014 which was a charge of $2.15M and down from December 2013 which was a charge of $1.73M.
Market-Based Uplift to Load	*Yes*	• As of settlement of Operating Day 12/31/2014, the market-based uplift was a charge of $9.69M, as opposed to a charge of $34.56M in November 2014 and a charge of $17.83M in December 2013.

Market Enhancements Under Consideration

Enhancement	Further Information

Evaluating market design improvement proposals	• Operating Reserve Demand Curve (ORDC)
	  • ERCOT is working with stakeholders to improve the ORDC design
	• Future Ancillary Services Team (FAST) Activity
	  • NPRR 667 (Ancillary Service Redesign) was posted 11/18/14
	  • Workshop to review comments on the NPRR was held on 01/30/15
	  • Brattle was selected to perform the Cost Benefit Analysis (CBA)

Evaluating Pilot Project Feasibility	• No current pilot projects

Major Project Highlights (as of 01/13/2015)

Project	Trending as Expected	Further Information

EMS Upgrade – Upgrade EMS and OTS from ALSTOM EMP 2.3 to EMP 3.0	*Yes*	• In the Execution Phase, tracking to the approved schedule and budget
		• Infrastructure Activities:
		  ○ Completed building the infrastructure platform for Development and Factory Acceptance Test 1
		  ○ Installing third party licenses and other necessary applications on FAT 1 platforms
		  ○ New infrastructure platform architecture completed, vendor build and pricing negotiations started
		• Development / Testing Activities:
		  ○ Completed code review and migration for Phase 2 development in the Generation, Network, OTS and Interface application areas
		  ○ Phase 3 development tasks in progress in the Generation, Network, Macomber Map and Interface areas
		  ○ Testing of Phase 2 code deliveries in progress

NMMS Upgrade – Replace the current Siemens NMMS application with the next generation of model management software available from Siemens	*Yes*	• Completed the Planning Phase in early December and started the Execution Phase on December 17th. Planning deliverables completed include:
		  ○ Detailed design documentation
		  ○ Plan for Execution Phase (schedule/timeline, milestones, resources, and delivery approach)
		• Current Execution Phase activities in progress or about to begin include:
		  ○ Finalization of the vendor's development environment – hardware required was built by ERCOT and shipped to the vendor in early January. Vendor received the hardware and is installing and configuring the environment with a target completion of mid-January
		  ○ Vendor started development of the core application and database in January on a temporary environment, with plans to migrate to the completed development environment when ready
		  ○ A collaborative effort between the vendor's User Experience team and ERCOT's User Experience team is also underway to jointly address development of the User Interface
		  ○ Activities expected to begin in late January/early February are focused on conducting formal code check point sessions, as well as documenting detailed test scripts

Major Project Highlights (as of 01/13/2015) – continued

Project	Trending as Expected	Further Information
Settlement System Upgrade – Replace proprietary code, data structures and tools with an ERCOT supported solution	*Yes*	• Successful go-live of the Settlements and Billing (S&B) functionality (the final delivery of the upgraded system), as well as two included NPRRs (580/467), in early December ◦ Production defects have been minimal and have been resolved ◦ Overall schedule and budget remain intact. Stabilization period to continue through March with project closure following • Early performance metrics indicate significant improvements ◦ Data aggregation run time has decreased from 3.5-4 hours to an average of 2 hours ◦ Settlement run time for Day Ahead Market has decreased from an inconsistent range of 1 to 4 hours to a consistent average of 30 minutes
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 is currently in the Execution phase and proceeding as planned ◦ The team completed a successful code merge of all needed components for MMS/OS in the testing environment. Server building activities for other higher environments is progressing as scheduled ◦ Functional testing is in progress, as well as data preparation activities to support the start of integration testing in late January ◦ Test plans for Non-functional, Load, Performance and Penetration testing are also being finalized ◦ Team was also able to plan for and address the needs of the 2015 Market System Enhancements projects for resources and test environments to avoid delays to either project
Market System Enhancements 2015 – Deliver NPRR626, Reliability Deployment Price Adder, along with other related NPRRs	*Yes*	• Project continues on track, completing Planning in early January and moving into the Execution Phase with a focus on delivery of NPRR626 and NPRR665 (if Board-approved) • Several delivery alternatives, all of which prioritize NPRR626, have been identified to offer the Market options for timeline and delivery of other NPRR items up for scope inclusion (NPRR568, NPRR644, NPRR645, NPRR598, NPRR595, OBD) • ERCOT to present the options to PRS and TAC in January for feedback and direction

Appendix

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