



## Item 4.1: CEO Update

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President & CEO  
ERCOT

Board of Directors Meeting

ERCOT Public  
December 13, 2016

# CEO Update: Variance to Budget (\$ in Millions) Net Revenues After Department Expenditures

**Net Revenues Year to Date Actuals: \$11.7 M Favorable** *(as of October 31, 2016)*

## **Major Revenue Variances**

\$2.1 M over budget: system administration fees favorable due to a stronger economy

## **Major Expenditure Variances**

\$2.8 M under budget: resource management (\$2.5 M staffing management; \$0.8 M project work; \$-0.5 staff backfill)

\$2.0 M under budget: computer hardware and other equipment purchases

\$1.1 M under budget: interest expense due to project funding and no revolver usage; interest income due to higher rates

\$1.4 M under budget: employee health, relocation, immigration and recognition program costs

\$1.0 M under budget: external studies/consulting services

\$0.6 M under budget: timing differences

**Net Revenues Year End Forecast: \$13.1 M Favorable** *(as of December 2, 2016)*

## **Major Revenue Variances**

\$2.1 M over budget: system administration fees favorable based on current actuals and load forecast for remainder of year

## **Major Expenditure Variances**

\$3.9 M under budget: resource management (\$3.2 M staffing management; \$1.3 M project work; \$-0.6 M staff backfill)

\$1.9 M under budget: computer hardware and other equipment purchases

\$1.4 M under budget: interest expense due to project funding and no revolver usage; interest income due to higher rates

\$1.3 M under budget: employee health, relocation, immigration and recognition program costs

\$1.1 M under budget: external studies/consulting services



## 2016 R6 Release Summary

- R6 Release Dates: December 6 – 8, 2016
- 94 Change Requests across the application areas
- NPRRs and SCRs
  - NOGRR147 / NPRR713: Reactive Power Testing Requirements
  - NPRR754: Revise Load Distribution Factors Report Posting Frequency
  - SCR787: Maintain NDCRC Data For Generator Transfer Between Resource Entities
  - SCR788: Addition of Integral ACE Feedback to GTBD Calculation
- Majority of the R6 changes are for the following functional areas:
  - Energy Management System, Enterprise Information Services, Enterprise Integration, Market Information System, Market Management System, Net Dependable Capability and Reactive Capability, and Outage Scheduler



# DC4 Technology Refresh Update

- Reliability initiative to replace ERCOT's aging computer technology
- Project initiated in 2015 with 4 years and \$48 million forecast.
- Scope, schedule and budget remain on track for success.

Contracts committed: 60% locked  
\$48 million budget: 40% spend forecast through 2016  
Hardware deployed: 21% as planned



## Key Challenges

- Migrating applications to the new computers
- Ensuring no disruption during transition

## Financials

- Forecast to meet or be slightly below budget

# DC4 Technology Refresh = 11 projects

2015

2016

2017

2018 / 2019

Program Governance

Database Servers

Core Network

Telecom Control Room / Grid Ops

Network Command & Control

x86 Server



x86 App Migrations

Database Storage

Remote Access

Telecom VoIP

Telecom DC Connectivity

 = 8 in-flight  
 = 3 not started



# RMR Review Following Board Approval of NPRR 788

- Calpine Corp. Clear Lake –  
Final Determination: **NOT NEEDED**
  - Did not meet RMR criteria to be necessary to support ERCOT transmission system reliability
- Greens Bayou Unit 5 –  
Supplemental Final Determination: **STILL NEEDED**
  - Instability or cascading under defined conditions
  - Unloading Shift Factor >2% on Singleton-Zenith 345 kV transmission lines
  - Unloading impact >5%



NRG Texas Power Photo

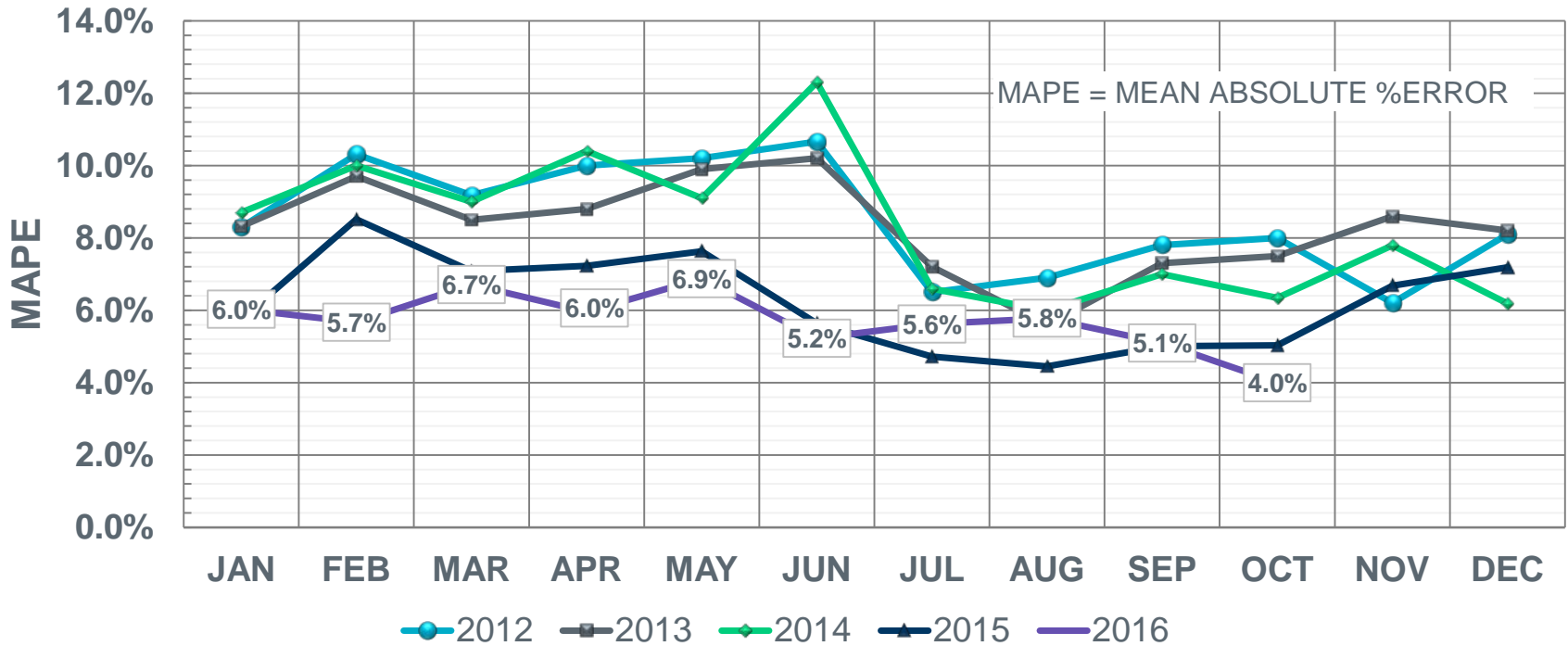
# 2016: New Records for a Growing System



- All-time systemwide demand
  - 71,110 MW (Aug. 11)
- Monthly demand
  - September: 66,853 MW (Sept. 19)
  - October: 59,848 MW (Oct. 5)
- Weekend demand
  - Aug. 7 (Sunday): 66,921 MW
- Wind generation output
  - Three new records in 2016
  - Current record: 15,033 MW (12:36 p.m., Nov. 27, 45.18% of load)
- Wind penetration (percent of load)
  - Three new records in 2016
  - Current record: 48.28% (1:10 a.m., March 23, 13,154 MW)

# Wind Forecasts Continue to Improve: Day Ahead

## Day-Ahead Wind Forecast Performance



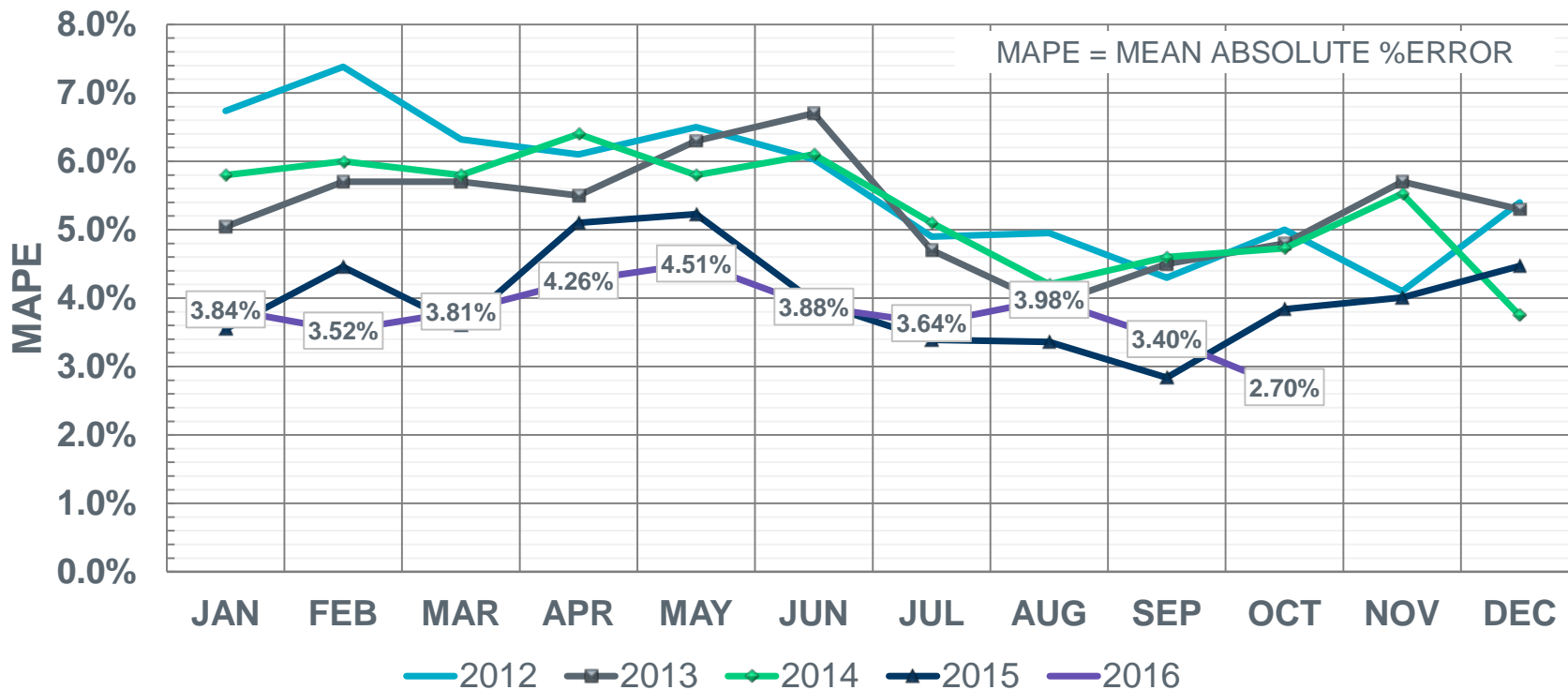
	2012	2013	2014	2015	2016
Yearly Average	8.5%	8.3%	8.3%	6.2%	5.7%





# Wind Forecasts Continue to Improve: Hour Ahead

## Hour-Ahead Wind Forecast Performance



	2012	2013	2014	2015	2016
Yearly Average	5.6%	5.3%	5.3%	4.0%	3.8%

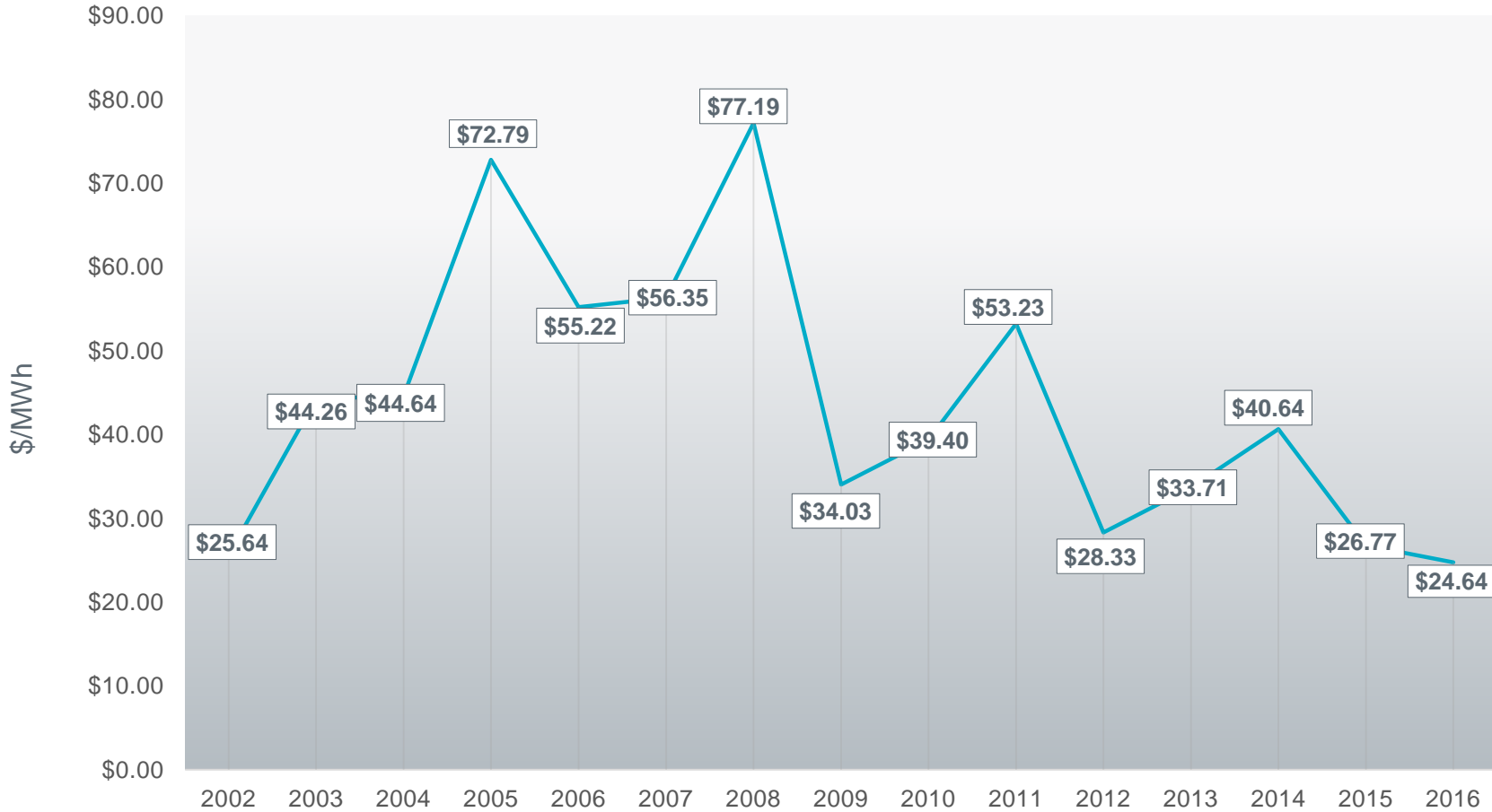


# Market Statistics – October 2016

Market Statistics	October 2015	October 2016	2015 Average	2016 YTD Average
Percentage of Real-Time load hedged in Day-Ahead Market	126.47%	121.38%	131.26%	121.95%
Average 'ERCOT Hub Average 345 kV Hub' Settlement Point Price in Day-Ahead Market (\$/MWh)	22.55	27.84	28.38	24.74
Average 'ERCOT Hub Average 345 kV Hub' Settlement Point Price in Real-Time (\$/MWh)	21.41	25.48	26.05	23.56
Average East Houston Fuel Index Price (\$/MMBtu)	2.35	3.08	2.57	2.34

# Wholesale Energy Prices at Record Lows

## Load-Weighted Average Energy Prices in ERCOT



# Looking Ahead

- Year-End Reports
  - December 15:  
Capacity, Demand & Reserves
  - December 30:  
Constraints & Needs
  - December 30:  
Long-Term System Assessment
- 2017 Legislative Session
  - January 10, 2017:  
85<sup>th</sup> Legislature convenes



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