



Item 8.1: CEO Update

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President & CEO
ERCOT

Board of Directors Meeting

ERCOT Public
February 14, 2017

State of the Grid



The 2016 State of the Grid Report, released today, focuses on continuing initiatives and successes from 2016.

Additional copies are available if needed.

CEO Update: Variance to Budget (\$ in Millions)

Net Revenues After Department Expenditures

Preliminary 2016 Net Revenues at Year End: \$13.4 M Favorable

Major Revenue Variances

\$2.0 M over budget: system administration fees favorable due to stronger economy

Major Expenditure Variances

\$3.7 M under budget: resource management (\$3.5 M staffing management; \$1.0 M project work; \$-0.8 M staff backfill)

\$2.5 M under budget: computer hardware and other equipment purchases

\$1.8 M under budget: employee health, relocation and immigration costs

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

\$1.2 M under budget: external studies/consulting services

2017 Revenues *(as of February 5, 2017)*

Major Revenue Variances

\$1.4 M under budget: system administration fees unfavorable due to mild weather

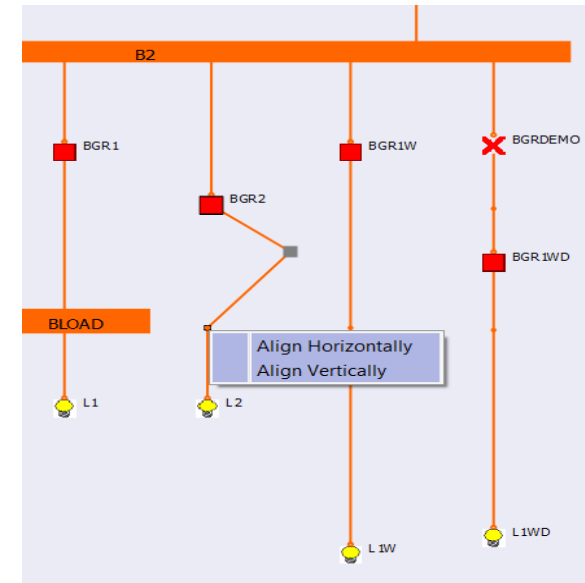


Q4 2016 Key Performance Indicator (KPI) Summary

		YTD - 2016		
		Stretch	Target	Below
Reliable Grid				
Grid Security Management/ Real-Time System		100%		
Control/ Scheduling and Dispatch		100%		
Outage Coordination/Planning		100%		
Forecasting		50%		50%
Compliance Monitoring and Reporting		67%		33%
IT Application Services		66%	17%	17%
Efficient Electricity Markets				
Bidding, Scheduling and Pricing		100%		
Settlement and Billing		50%		50%
Market Credit		100%		
Market Information		100%		
IT Application Services		100%		
Open Access and Retail Choice				
Customer Switching/Registry		100%		
Market Information		100%		
IT Application Services		100%		
Other Support and Management Functions				
Finance		100%		
Security		100%		
Total number of KPIs tracked:		30		
Percent meeting stretch:		67%		
Percent meeting target:		23%		
Percent below target:		10%		

Major Project Not Tracking: NMMS

- **Benefits:** The project offers several benefits.
 - Improve support (new version).
 - Upgrade technology (Operating System, DB, etc.).
 - Enable Resource Entities to make model changes.
 - Improve internal supportability for weekly model loads.
 - Improve cyber security protection.
- **Status:** The project is near go-live.
 - Testing has validated functionality with low defect levels.
 - Market Participant training is completed.
- **Concern:** The project is not tracking to expectations due to concerns.
 - System stability (intermittent system restarts).
 - Performance (for high-volume use).
 - Operational readiness (requires end-to-end testing of model load process).
- **Recommendation:** Steering Committee recommends additional hardening.
 - Ensure stability, performance and readiness prior to go-live.
 - Update plan to determine revised date.

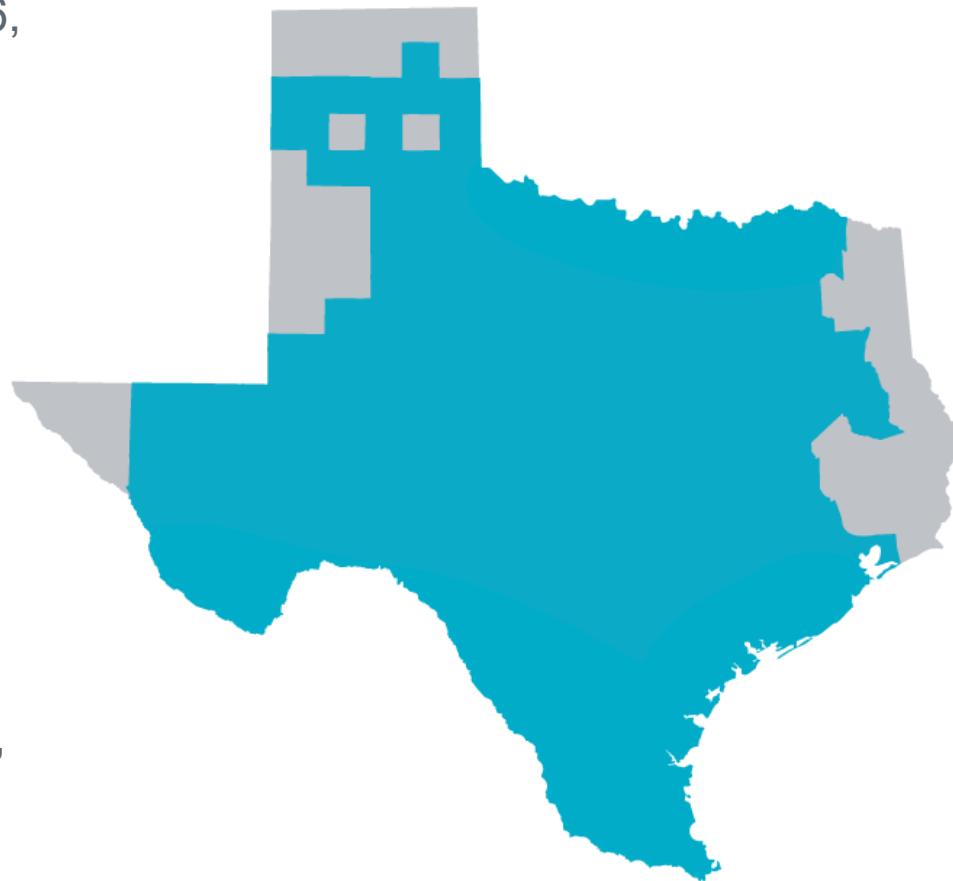


Looking Ahead: What key developments are we preparing for on the ERCOT System?

Since the Board's last meeting of 2016, ERCOT stakeholders and staff completed several reports:

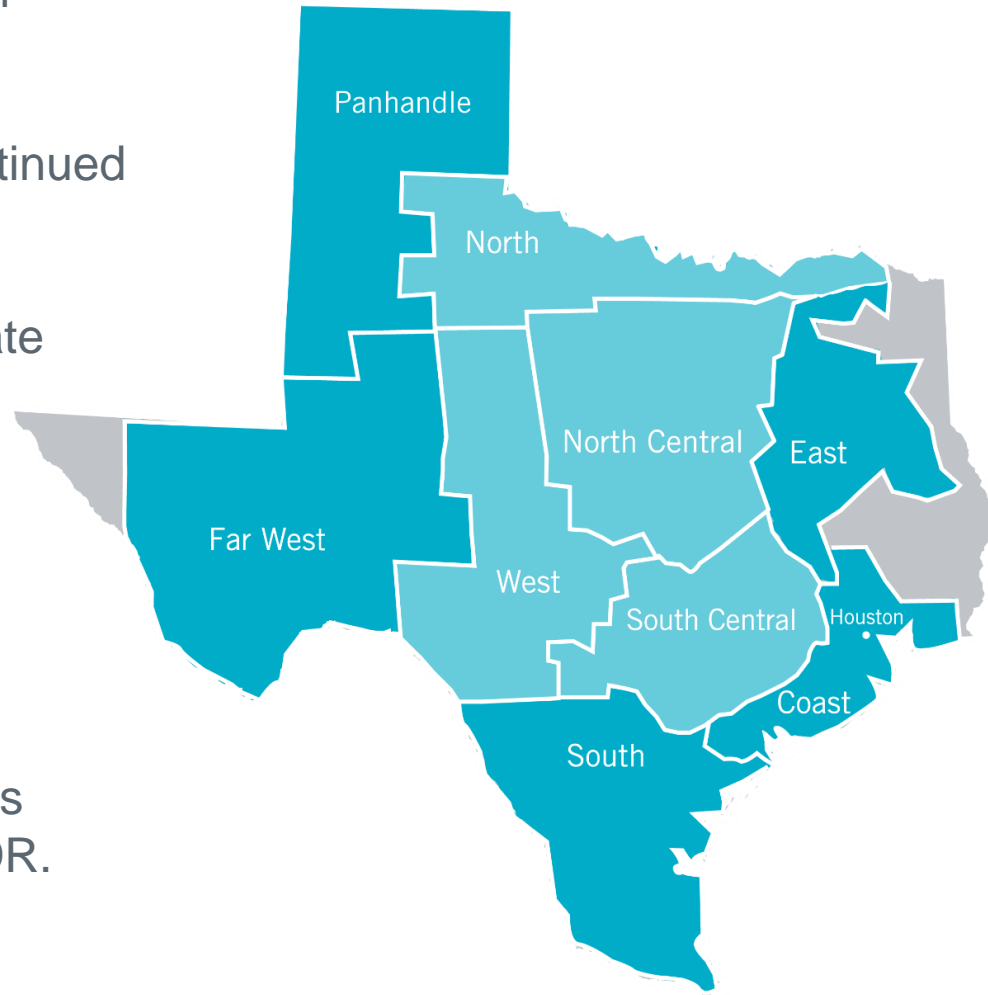
- Long-Term System Assessment (LTSA)
- Existing and Potential Constraints & Needs (C&N)
- December 2016 Report on Capacity, Demand & Reserves (CDR)
- Demand & Energy (D&E) for 2016

Although forecasts are not predictions, here are some highlights on what the 2016 reports indicate about ERCOT's future.



ERCOT-wide developments

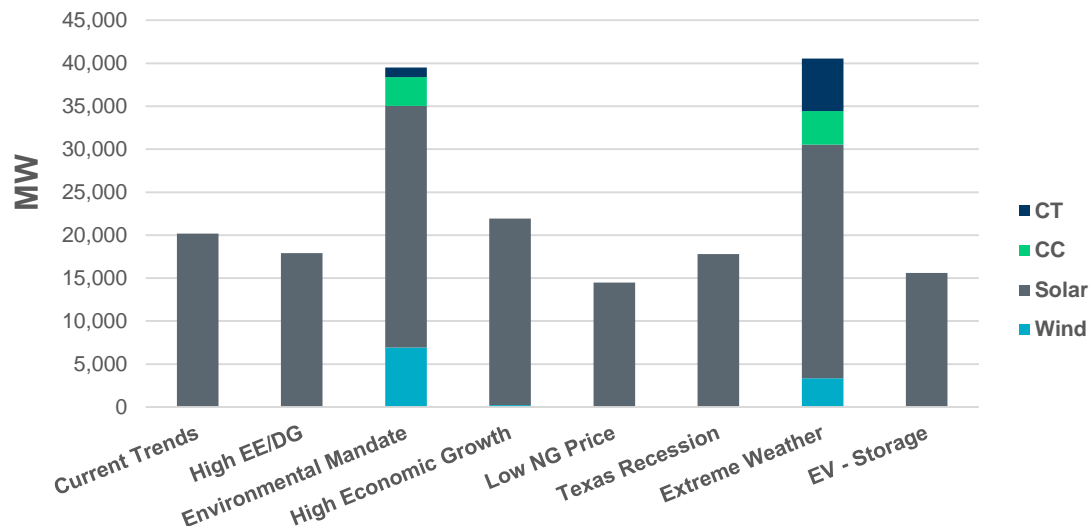
- Increased load forecast appeared in December CDR.
- In LTSA scenarios, load growth continued in all but one scenario.
- The one scenario that did not indicate load growth was based on high penetration of distributed energy resources and increased energy efficiency.
- D&E shows continued wind growth in 2016, both in megawatts and penetration percentages. Numerous future wind projects qualified for CDR.



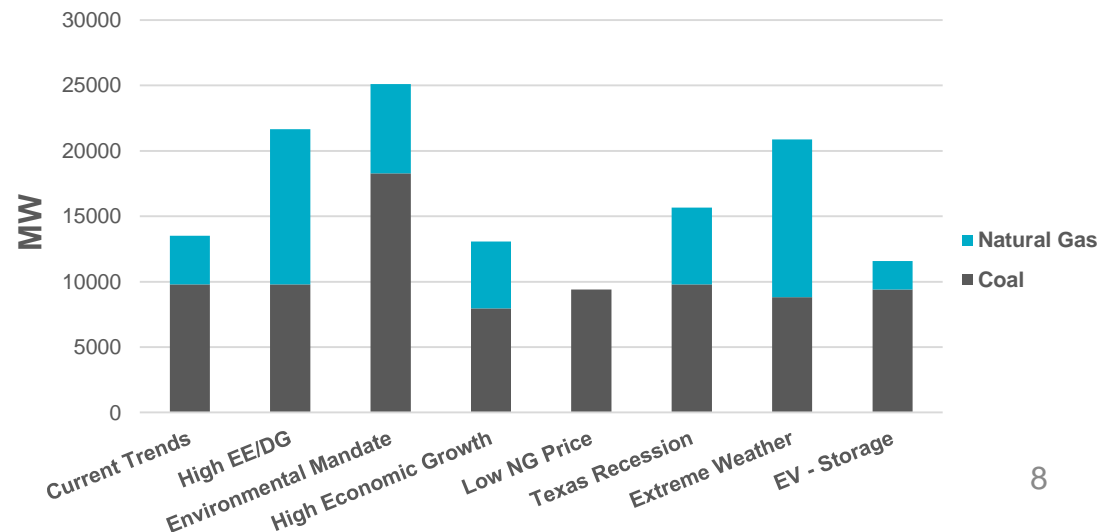
Potential Impacts of Utility-Scale Solar Additions

- All LTSA scenarios show significant increases in utility-scale solar resource development.
- Increased solar development could accelerate the need for West Texas transmission investment.
- Potential issue of net-peak resource adequacy: The summer resource adequacy challenge may shift from its traditional 4-5 p.m. window to the 8 p.m. timeframe.
- Net-peak issues may cause us to modify how we report resource adequacy in the CDR.

Capacity Additions Across All Scenarios

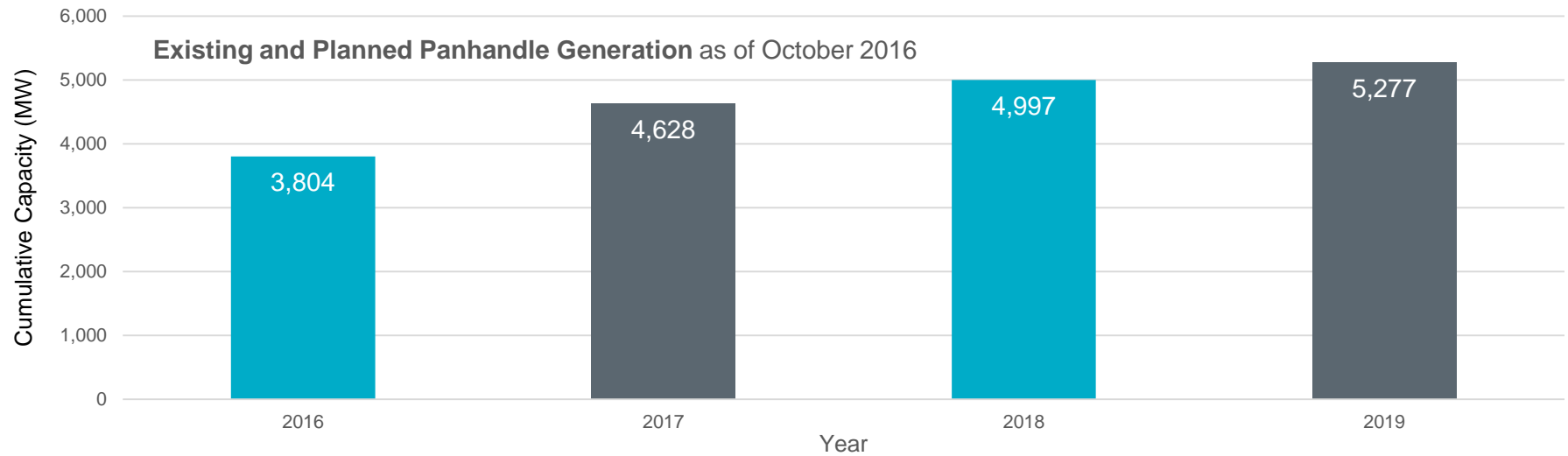
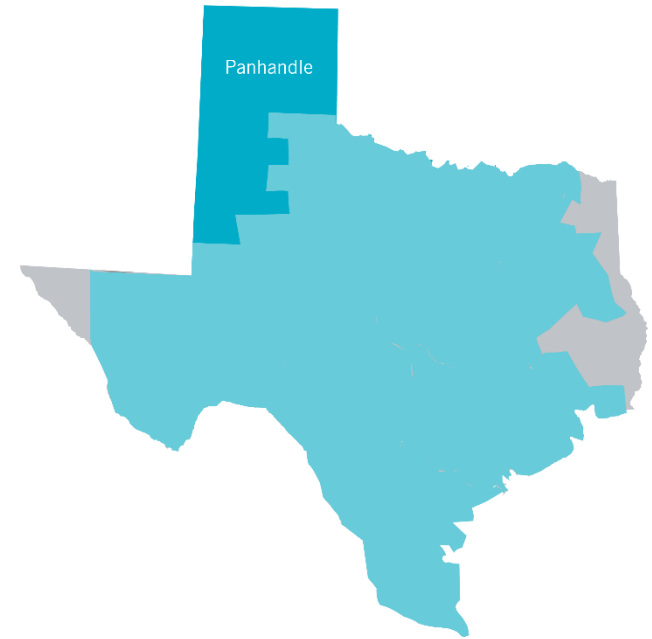


Generation Retirements Across All Scenarios



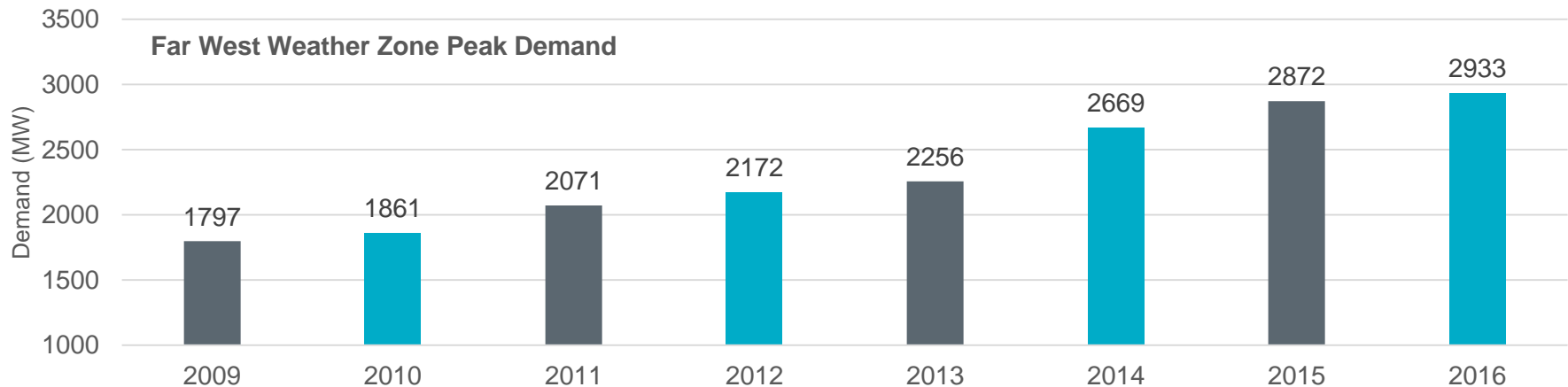
Texas Panhandle

- According to the LTSA, expected generation additions in the Panhandle are likely to necessitate additional transmission improvements.
- ERCOT will need to continue its focus on stability constraints and other issues associated with exporting large amounts of wind out of the region.
- Similar stability constraints are being seen in other parts of ERCOT.



West Texas

- ERCOT and the Regional Planning Group endorsed six major transmission projects in 2016, with others under review.
- Numerous system improvements are completed and underway. C&N reported: “For the first time in many years none of the top 15 constraints on the ERCOT system were related to oil and gas demand growth ... in West Texas.”
- However ... Energy Ventures Analysis (EVA) analysis found that, “Permian Basin drilling activity remains the strongest of all the United States oil plays and that the Permian Basin, being a world class oil field, would quickly see a significant rebound in activity once oil prices recover.”



South Texas & the Lower Rio Grande Valley

- 2016: Energized 345-kV Valley Import and Cross Valley projects, and ERCOT Board endorsed Hidalgo-Star (345-kV) and LRGV (two 300-MVAR SVC) projects.
- ERCOT Operations' efforts to improve Valley import limits: Depending on conditions, actions could increase load-serving capability for the Valley by up to 400-500 MW.
- Development of proposed Liquefied Natural Gas (LNG) facilities at the Port of Brownsville would likely require additional LRGV generation and/or additional transmission import lines.



Legend

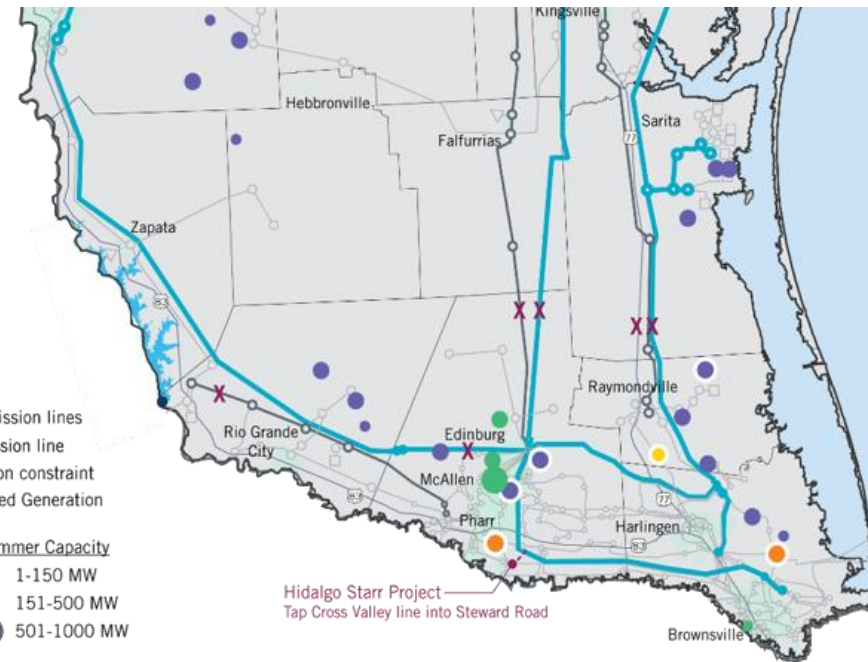
- Existing 345 kV transmission lines
- Future 345 kV transmission line
- Perimeter of transmission constraint
- Future SVC
- Planned Generation

Existing Generation

- Gas
- Hydro
- Wind

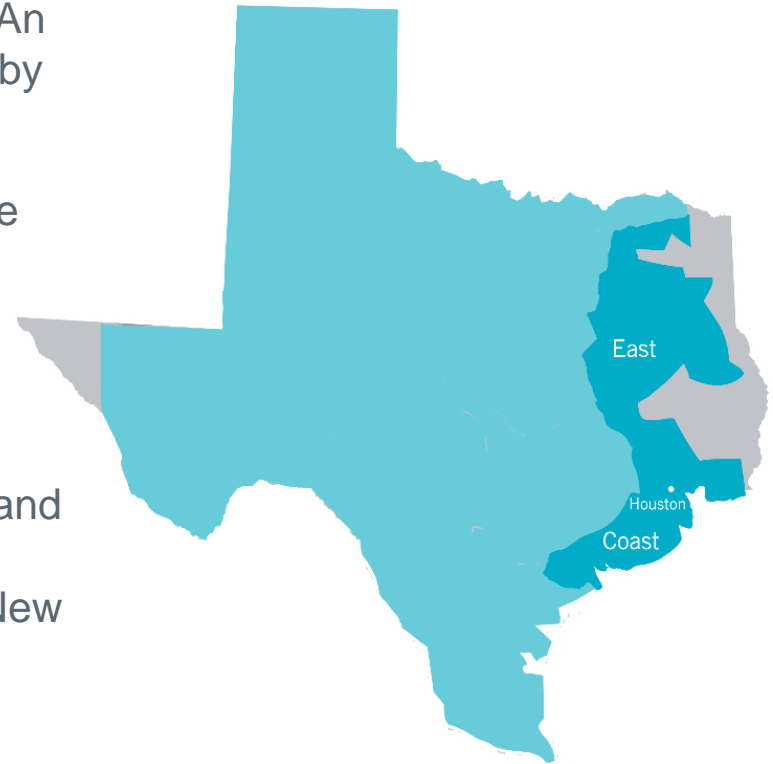
Summer Capacity

- 1-150 MW
- 151-500 MW
- 501-1000 MW



Houston and ERCOT's Eastern Edge

- C&N reports that in 2016, power flow from north to Houston was the most significant constraint on the ERCOT system for the second consecutive year. An ongoing 345-kV project, expected to be in service by summer 2018, should help relieve congestion.
- Regional Haze impacts, now uncertain, would have required 3,000 MW of coal capacity to have new scrubbers, and another 5,500 MW to upgrade existing scrubbers.
- LTSA scenarios show that a combination of high amounts of solar generation additions in the west and generation retirements in the east could result in a significant increase in west-to-east power flows. New transmission investments might be needed to accommodate the revised system power flows.
- Timing of unit retirements remains a key variable in 2017 and beyond.



Special Recognition – API Guide Team

Collaborated with stakeholders on an Application Program Interface (API) quick-start guide for market participants

- Quick-start guide for machine-to-machine programmatic interfaces
- Makes programmatic access to data extracts and reports easier
- An alternative to current 500-page complex guide
- Collaborative effort between ERCOT and Market Participants (MDWG)

Team Members:

From left, Brian Brandaw, Lloyd Pritchard, Susan Jinright, Nick Barbas and Ted Hailu.

Special thanks to the Market Data Working Group (MDWG) – Chair: Julie Thomas, Vistra

