



Item 8.1: CEO Update - Revised

Bill Magness
President & CEO
ERCOT

Board of Directors Meeting

ERCOT Public
February 20, 2018

CEO Update: 2017 Variance to Budget (\$ in Millions) Net Revenues After Department Expenditures

Preliminary Net Revenues at Year End: \$10.8 M Favorable

Major Revenue Variances

\$1.7 M over budget: system administration fees due to colder-than-forecasted weather and stronger economy

\$0.9 M over budget: interconnection revenue

Major Expenditure Variances

\$4.7 M under budget: interest expense due to project funding and no revolver usage; interest income due to higher rates

\$1.6 M under budget: computer hardware and equipment purchases

\$0.8 M under budget: building maintenance and property tax

\$0.3 M under budget: resource management (\$-2.1 M staff backfill and augmentation; \$1.7 M project work; \$0.7 M staffing management)

\$1.0 M over budget: enterprise-wide license agreement to ensure availability of key operations tools

2018 Revenues (as of Feb. 5, 2018)

Major Revenue Variances

\$1.4 M over budget: system administration fees due to colder-than-forecasted weather

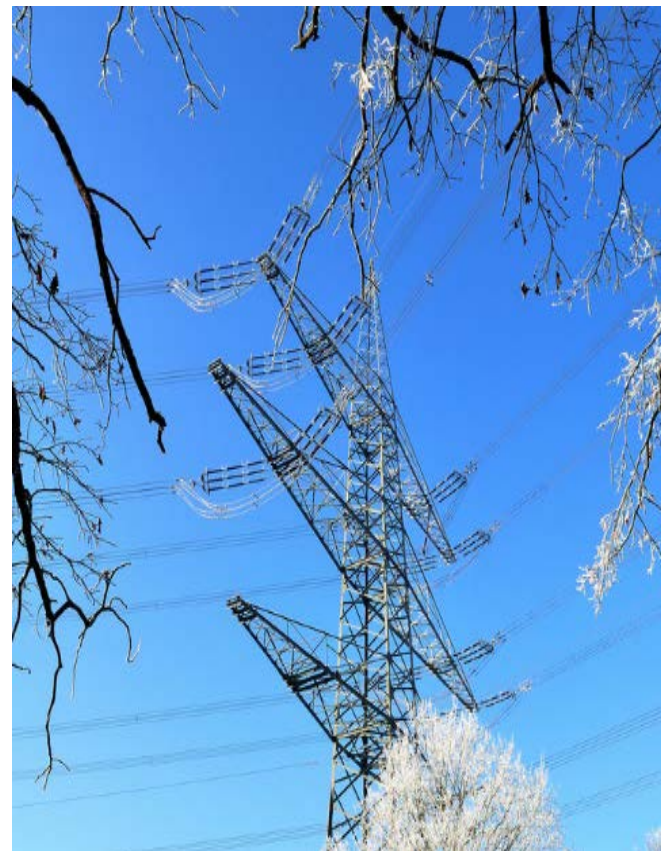
2018 R1 Release Summary

R1 Release Dates: Feb. 6 – 8, 2018

- 115 Change Requests across the application areas
- NPRRs
 - NPRR659: Discontinue RMR Cost Data Deviation Requests/Responses Report
 - NPRR683: Revision to Available Credit Limit Calculation
 - NPRR743: Revision to MCE to Have a Floor For Load Exposure
 - NPRR760: Calculation of Exposure Variables For Days With No Activity
 - NPRR800: Revisions to Credit Exposure Calculations to Use Electricity Futures Market Prices
 - NPRR810: Applicability of RMR Incentive Factor on Reservation and Transportation Costs Associated with Firm Fuel Supplies
- R1 impacted functional areas
 - Credit Monitoring & Management, Data and Information Products, Data Management & Governance, Energy Management System, Enterprise Integration Nodal Services, Market Management System, Market Settlements, Retail, Web Communications

Winter 2018 Update: New Records in January

- Winter peak demand record of 65,750* MW set on Jan. 17 between 7 and 8 a.m. (**Preliminary figure*)
 - New winter peak was more than 6,000 MW higher than prior winter peak record
 - ERCOT had sufficient transmission and generation resources to meet demand during both of the January winter peak periods
- New wind output record of 17,376 MW set Jan. 11 at 3:34 p.m.



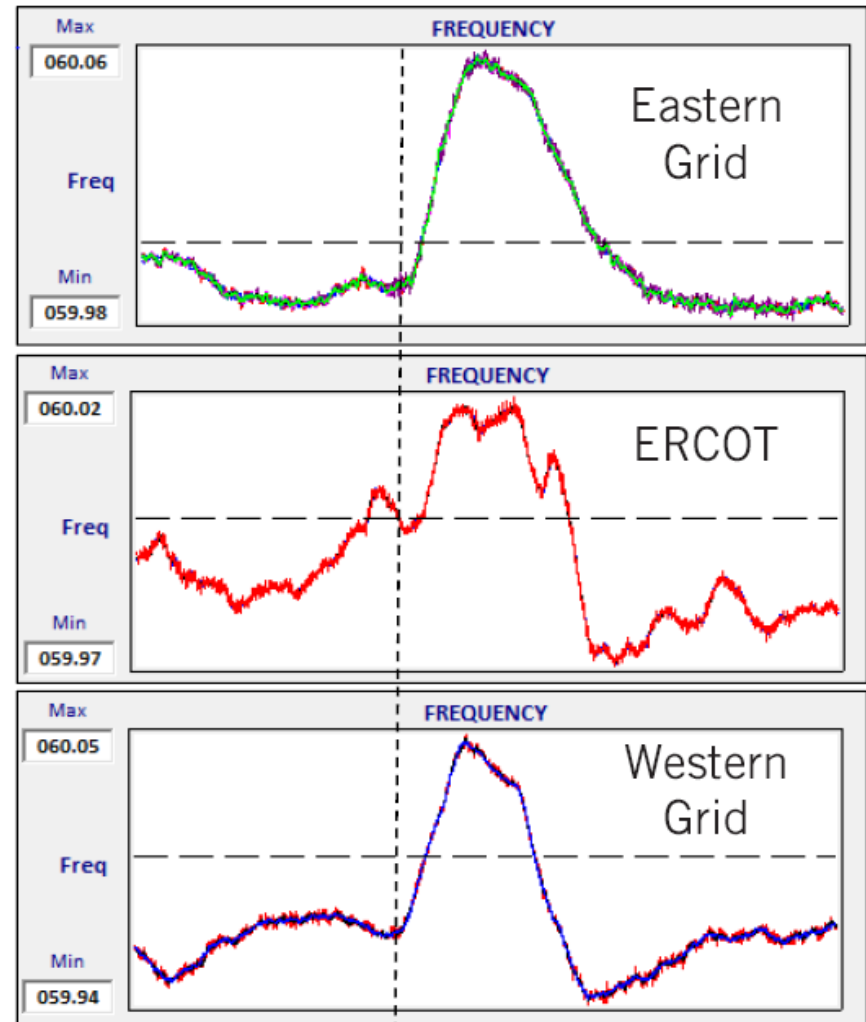
Winter 2018 Update: Market Pricing Impacts – Revised*

- Higher market prices for energy and Ancillary Services during high demand periods increased charges to load, including RENA and Real-Time Energy Imbalance.
 - Dates of interest were Jan. 2, 16, 17, 18 and 23. Outcomes were consistent with design. ERCOT will review performance with stakeholders.
- Market prices reached system-wide cap during two intervals on Jan. 23.
 - Ramping issues led to prices established with reference to the shadow price cap.
 - Physical Responsive Capability (PRC) levels remained above 3,000 MW.



Winter 2018 Update: Super Bowl & Frequency

- During the broadcast of Super Bowl LII on Feb. 4, 2018, a reported equipment failure caused television screens to go dark for 20 seconds.
- Data from the Texas Synchrophasor Network shows that the “loss of load” caused by the TVs going dark was roughly the same as a large generator tripping (but with frequency up rather than down).



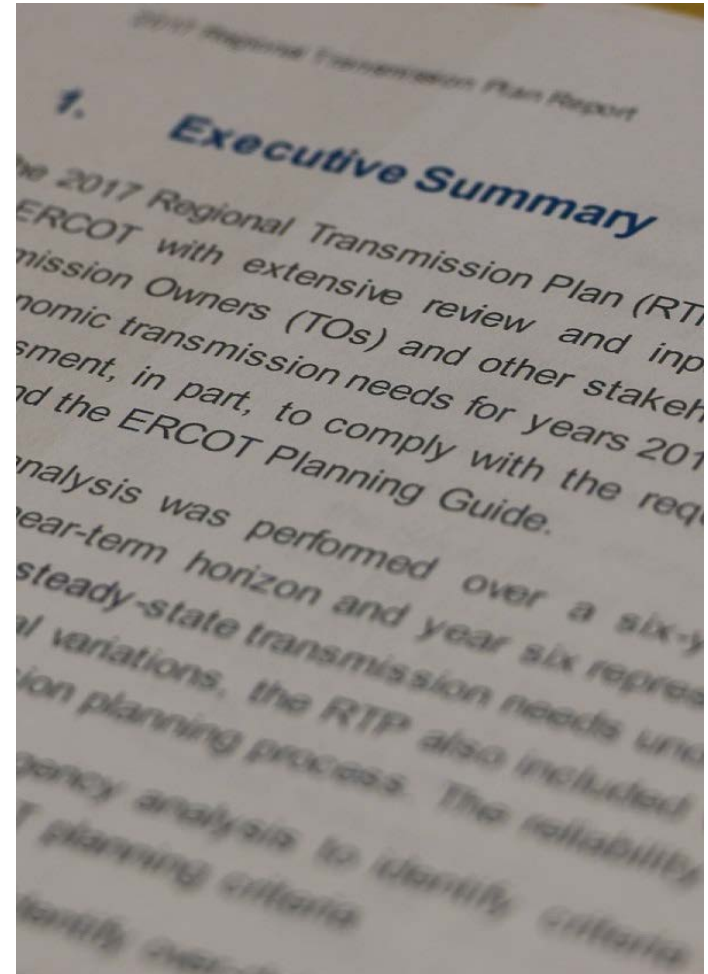
Source: Texas Synchrophasor Network, Baylor University, Feb. 6, 2018

Reporting and Retail Systems Issue on Jan. 18

- An error in a storage system configuration resulted in a 1 to 1.5 hour interruption of several reporting systems.
- Systems affected during this time:
 - MIS reports, Current Day Reporting (CDR), and public dashboards
 - Submissions (CRR, DAM, MMS, MIS)
 - Outbound web services
 - MarkeTrak
 - Retail transaction processing (required an additional hour to restore)
- Steps taken to prevent recurrence:
 - Additional steps in process to validate configuration changes
 - Additional on-screen information for situational awareness
 - Copy/paste from prepared script to prevent inadvertent errors

2017 Year-End Reports

- Since the Board's last meeting in 2017, ERCOT stakeholders and staff published several reports on key ERCOT system issues.
 - Capacity, Demand and Reserves Report
 - Demand and Energy Report
 - Regional Transmission Plan
 - Report on Existing and Potential Electric System Constraints and Needs
 - PUC Operations Report and Plan
- We will review highlights of the year-end reports this morning.

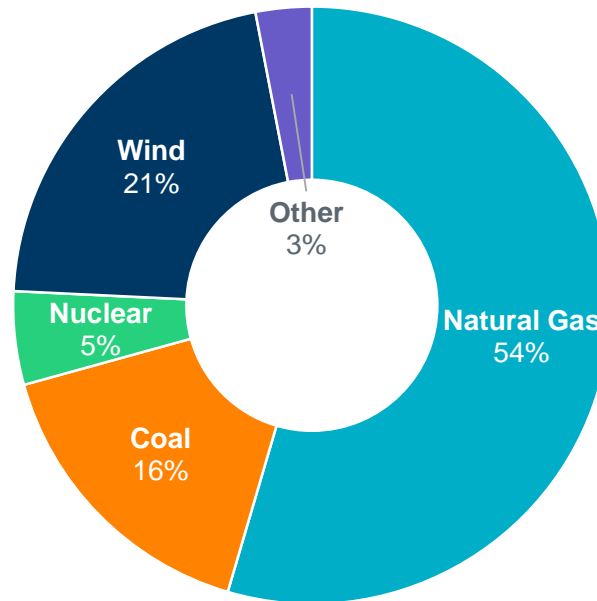


Capacity, Demand and Reserves (CDR) Report

- December CDR projects 9.3% planning reserve margin for summer 2018, with margins increasing in subsequent years
- 3,800 MW in new generation resources
- 7,200 MW decrease in overall projected generation capacity for summer 2018, mainly due to retirements and delayed new projects

CDR Resource Mix, Installed Capacity for First Forecast Year

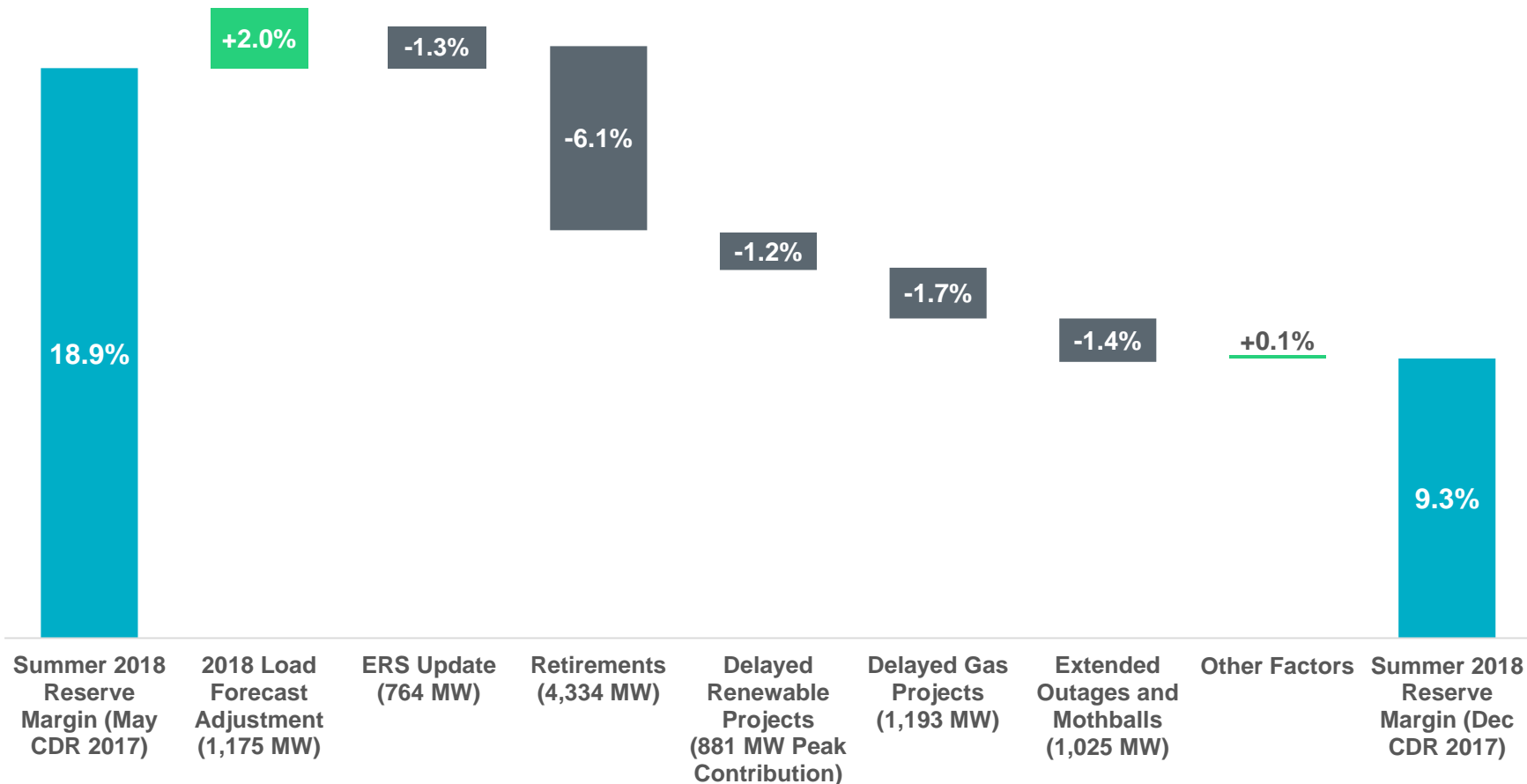
- Reflects operational installed capacity — excludes units designated as indefinitely mothballed or under extended outage, and accounts for rating changes reported by resource owners.
- Other category includes solar, hydro and biomass-fired units.



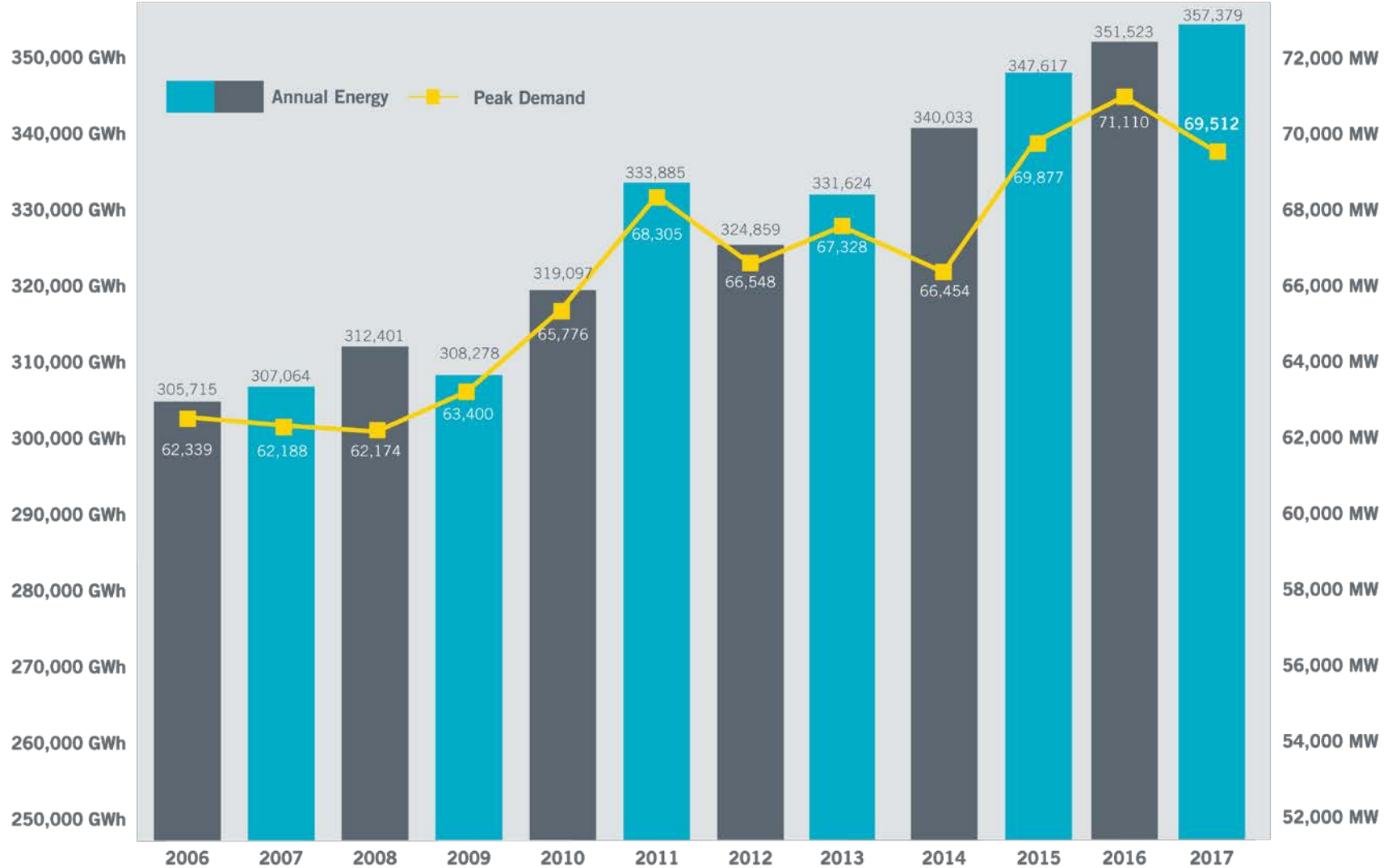
Summer 2018
(2017 Dec. CDR)

2018 Summer Reserve Margin Changes

2018 Summer Reserve Margin Changes Since May 2017 CDR



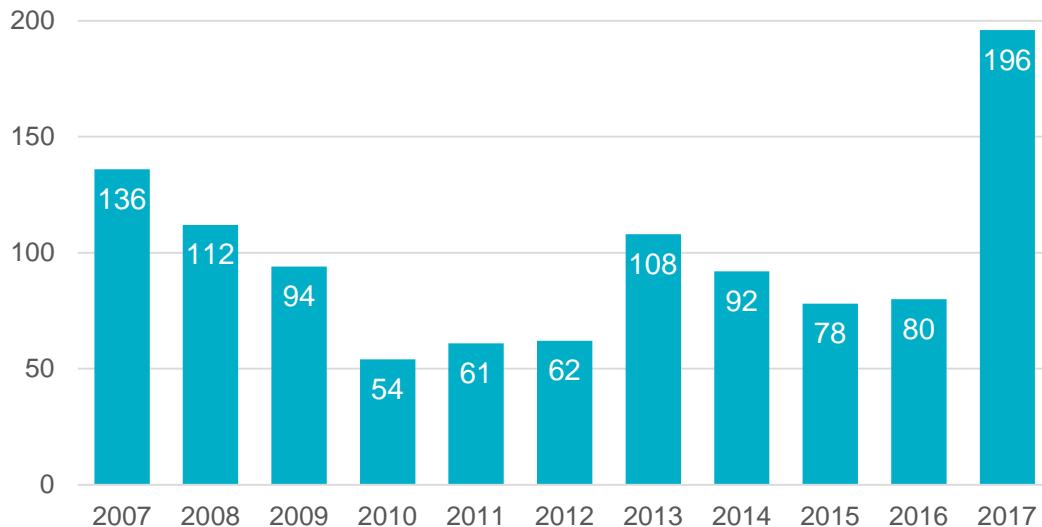
Annual Energy and Peak Demand (2006-2017)



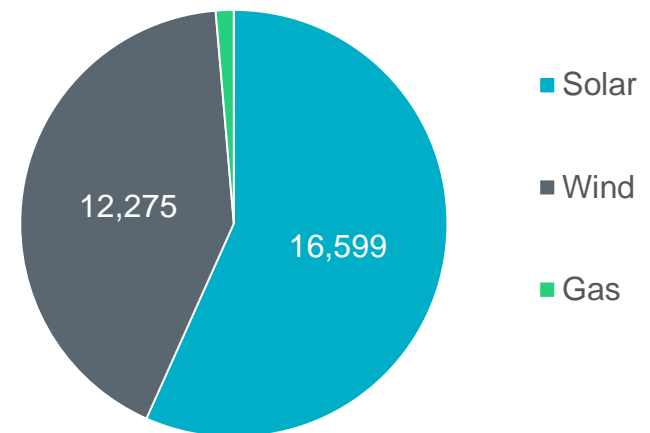
Interconnection Requests in ERCOT

- Developers continue to plan projects in the ERCOT region
- Interconnection requests in 2017 at historic levels
 - Next highest year for requests dates back to 2007 (i.e., 136 requests)
 - Utility-scale solar projects accounted for 56% of interconnection requests

Generation Interconnection Requests by Year



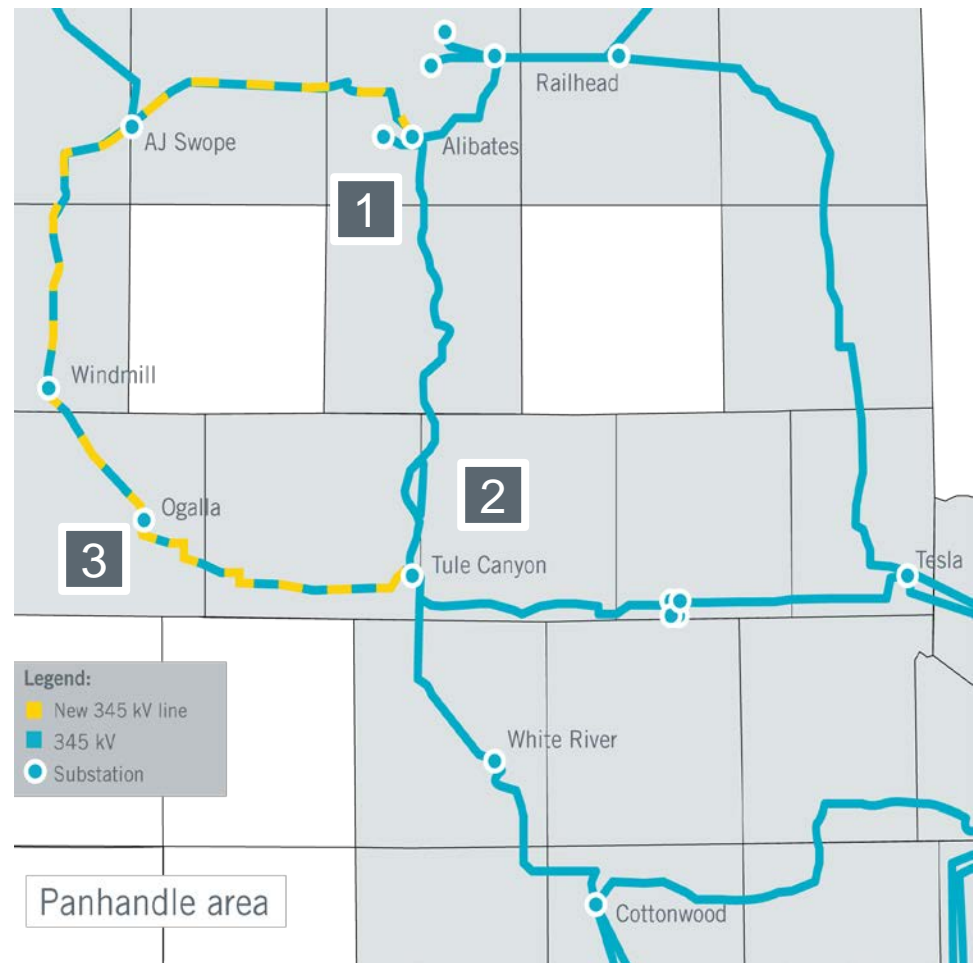
Capacity (MW) of 2017 Generation Interconnection Requests



Transmission Developments by Region: The Panhandle

Two Panhandle transmission improvements are scheduled to be in service in 2018 to help reduce congestion associated with moving large amounts of wind-generated power to other load centers in the eastern part of the state.

Map Index	Transmission Improvement
1	Alibates Synchronous Condenser
2	Tule Canyon Synchronous Condenser
3	Alibates-AJ Swope-Windmill Ogallala-Tule Canyon 345 kV Circuit Addition



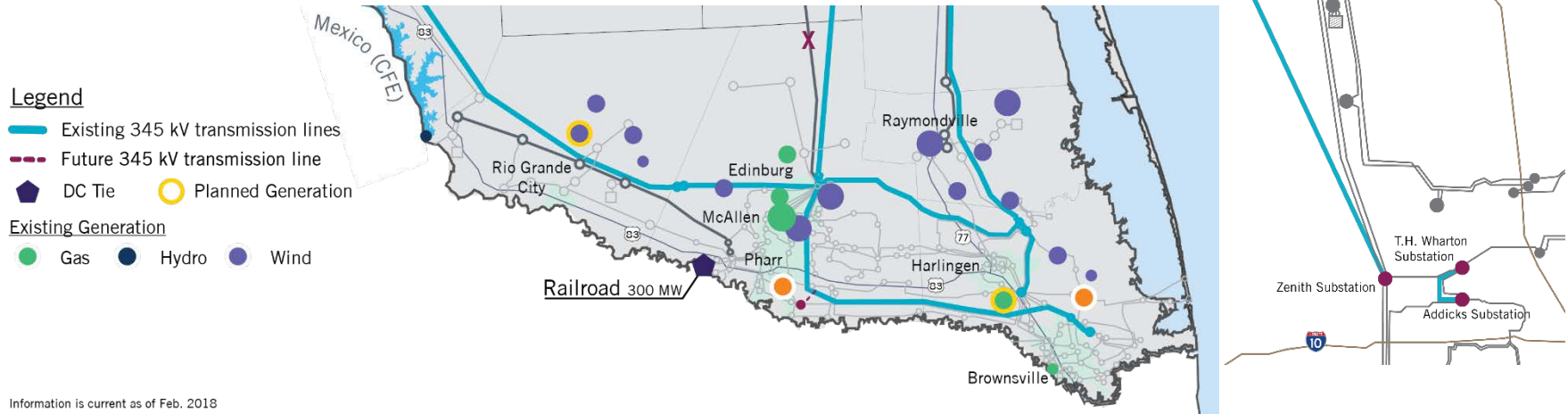
Houston & Rio Grande Valley

Houston

Demand growth and generation retirements continue to contribute to transmission congestion in the Houston area. The 345-kV Houston Import Project is scheduled for completion in spring 2018 and will import more power from the north.

Lower Rio Grande Valley

ERCOT continues to assess this growing area's electricity needs. The addition of two dynamic reactive devices are expected to be in service in late 2018 to help address growth in this region.



Information is current as of Feb. 2018



Freeport Master Plan addresses industrial growth

Planned industrial facility additions, including the Freeport Liquefied Natural Gas facility, are expected to increase peak demand in the Freeport area from less than 800 MW in 2014 to nearly 2,300 MW by 2022.

The Freeport Master Plan Project, endorsed by the ERCOT Board in December 2017, includes a new 345-kV line into the Freeport area.

Short-term upgrades will occur by 2020, and the new line and circuit upgrades along an existing 345-kV line are expected to be in place by 2022.



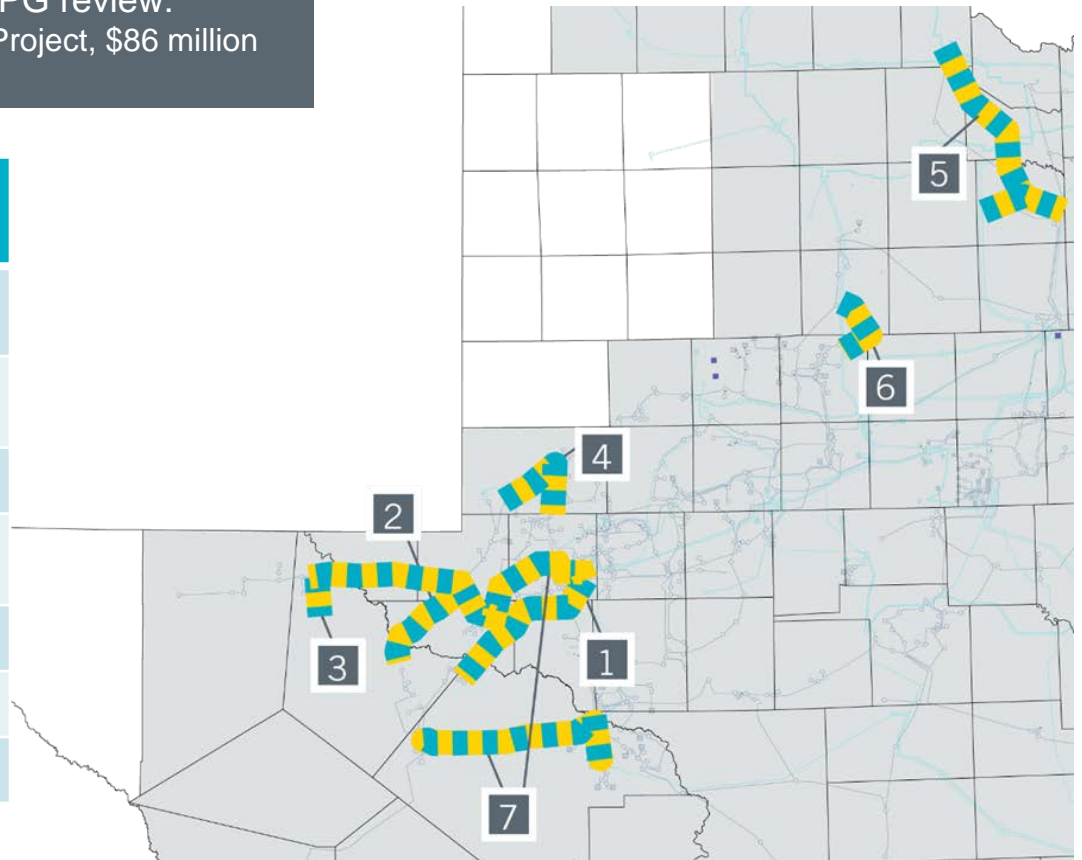
West Texas

Transmission additions and upgrades have been made in West Texas over the past five years, but more transmission is needed to keep up with increased load due to oil and gas activity and solar generation development in the area. An item on today's agenda requests adding a "critical" designation to one of the improvement projects approved by the Board in 2017.

New West Texas projects currently under RPG review:

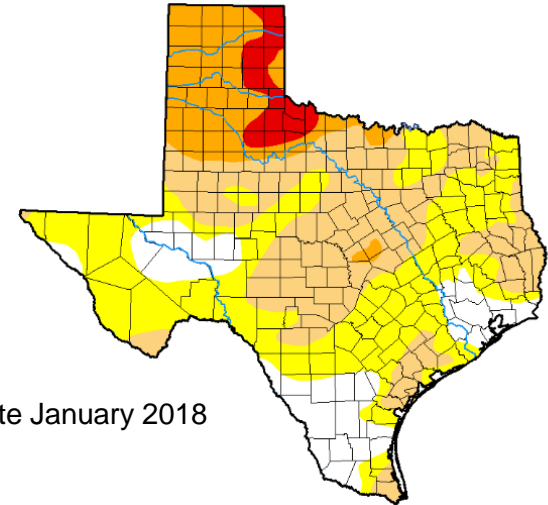
- Far West Texas Dynamic Reactive Devices Project, \$86 million
- AEPSC Pecos County Project, \$43 million

Map Index	Transmission Improvement
1	Barilla Junction Area Improvement Project
2	Line 69H Rebuild and 138 kV Conversion Project
3	Riverton-Sand Lake Project
4	Andrews County South – Holt – Andrews North Upgrade Project
5	Katz to Tardis Transmission Project
6	Salt Creek Project
7	Far West Texas Project

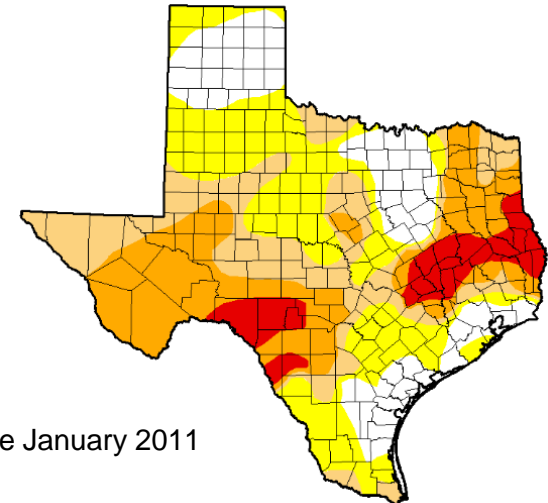


System Outlook for Spring and Summer

- ERCOT will release the Seasonal Assessment of Resource Adequacy (final for spring, preliminary for summer 2018) in March.
- ERCOT is anticipating a drier-than-normal spring, resulting in increased concerns for drought heading into summer.
 - 49% of Texas is in moderate drought or worse
 - 17% of Texas is in severe drought or worse, mostly in the Panhandle



Late January 2018



Late January 2011



Employee Recognition

- Team effort to implement SAS improvements
 - Enterprise level approach to using SAS software that is more resilient, more secure, less expensive, and allows for better support and accountability
 - Used by ERCOT and IMM



Pictured from left,
John Messer,
Ginger Budzinski,
Carl Raish,
Grant Jansen and
Steven Lang

Not pictured:
Janice Ayson,
Steve Chappel,
Calvin Opheim,
Lisa Sanchez and
Bryan Zhang