The seal of the Public Utility Commission of Texas is a circular emblem. It features a five-pointed star in the center, surrounded by a wreath. The words "PUBLIC UTILITY COMMISSION" are inscribed around the top inner edge, and "STATE OF TEXAS" is at the bottom. The entire seal is rendered in a light gray, semi-transparent style.

PUC 101

January 22, 2015

*Chairman Donna L. Nelson
Public Utility Commission of
Texas*

PUC Authority

- **Quasi-judicial**

- The Commission decides contested cases. Like judges, Commissioners are bound by ex parte laws, which restricts us to information in the record, when making decisions in contested cases.

- **Quasi-legislative**

- The Commission holds public hearings and conducts rulemakings to establish substantive rules.

PUC Jurisdiction

- Electric
- Telecom
- Water Services



Committees to Watch

- **House Committees to watch**

- State Affairs, Electric and Telecom
- Energy Resources, Electric
- Environmental Regulation, EPA
- Natural Resources, Water

- **Senate Committees to watch**

- Business and Commerce, Electric and Telecom
- Natural Resources, Water, EPA

Water Jurisdiction

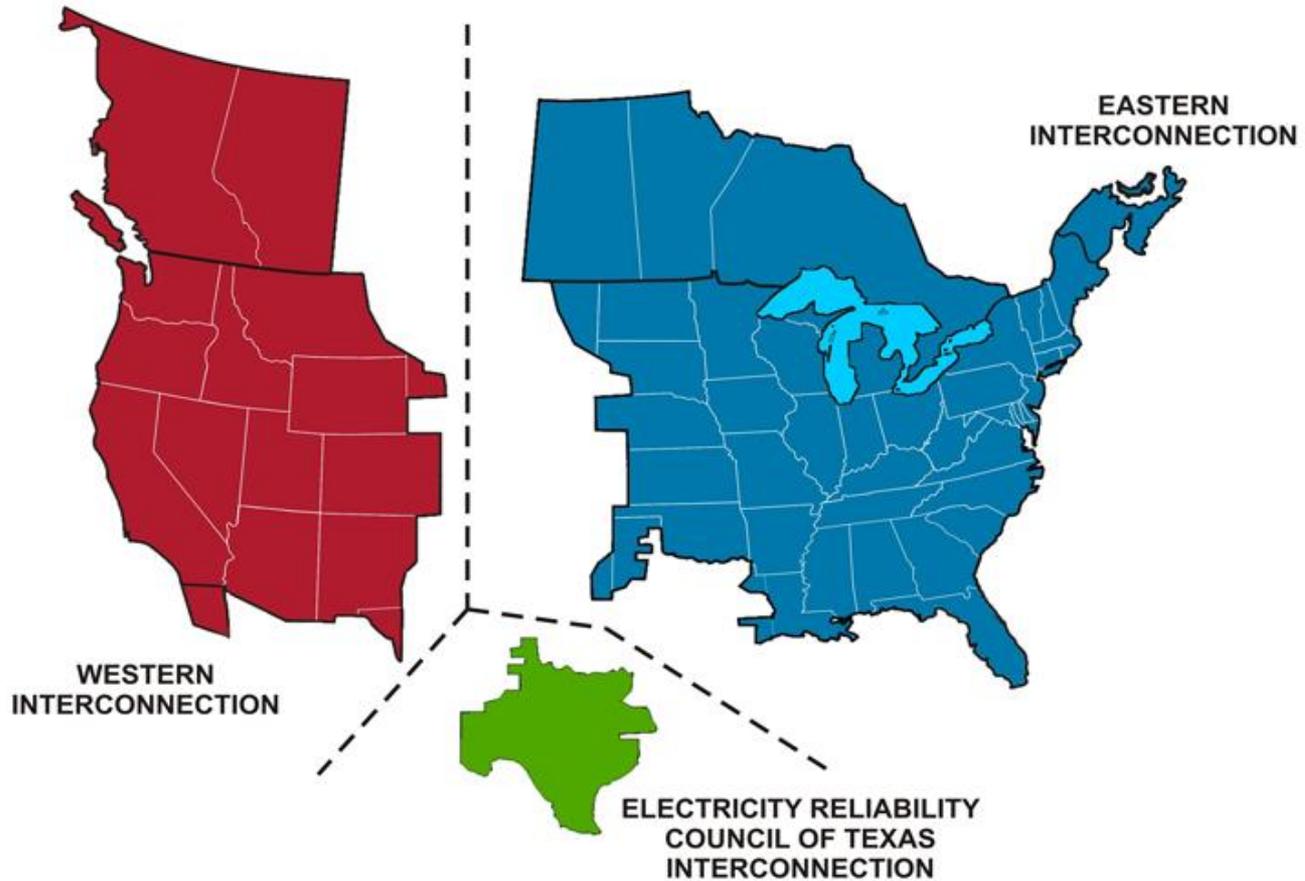
- The PUC has original jurisdiction over Investor Owned Utilities (IOUs) that provide retail service outside the corporate boundaries of a municipality.
- HB 1600/ SB 567
 - Transferred activities of TCEQ relating to the economic regulation of water and sewer service to the PUC.
 - Granted the PUC authority to regulate and supervise the business of each water and sewer utility within its jurisdiction.
 - Classified public utilities that provide retail water or sewer utility service as Class A, Class B, or Class C utilities according to the number of connections as of September 1, 2015.
 - Set out procedural provisions and reporting requirements.

Water Update

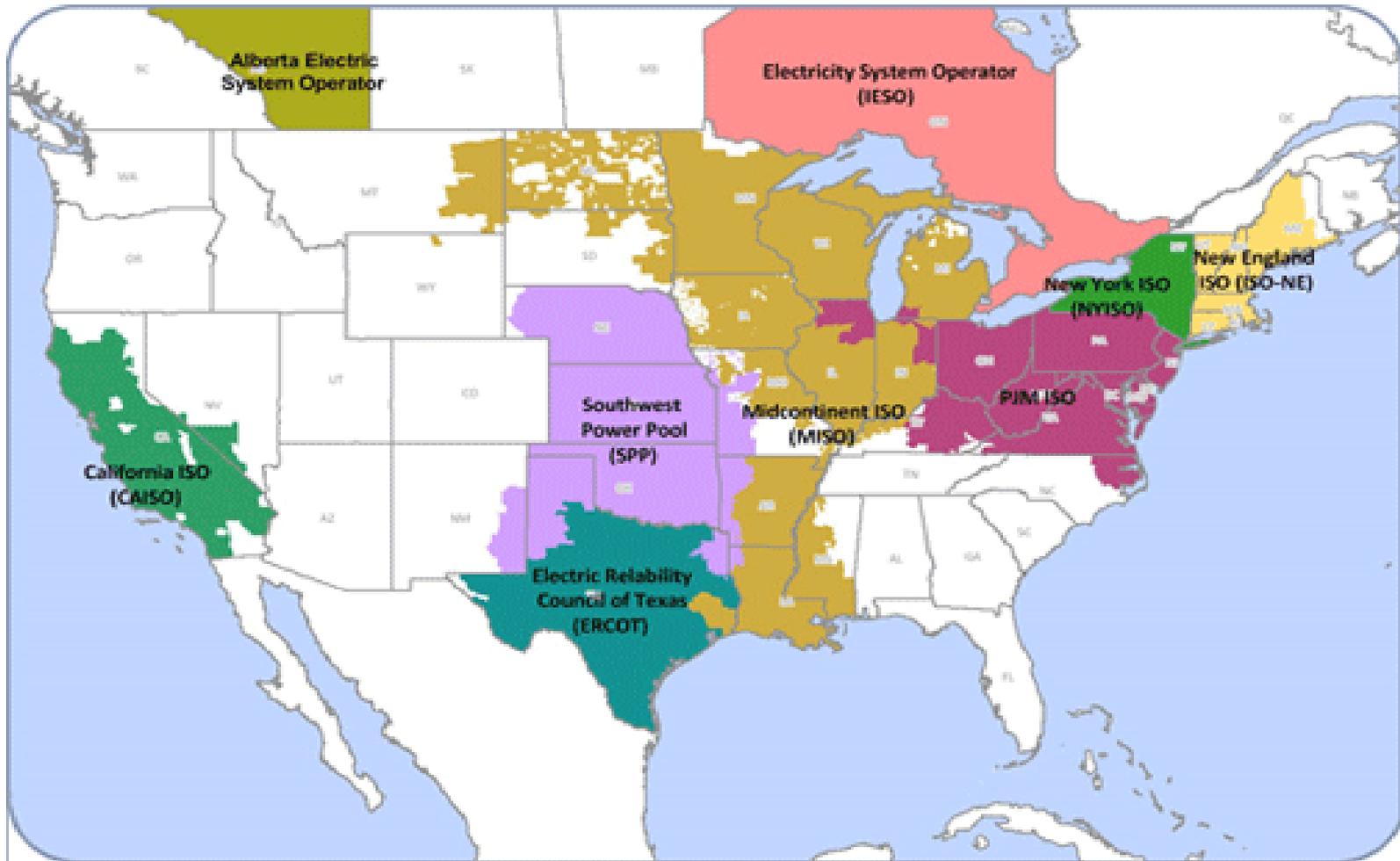
- 278 pending rate and CCN cases were transferred to the PUC from TCEQ.
- The PUC adopted language from TCEQ rules in Title 30, Texas Administrative Code (TAC), Chapter 291, on July 29th, 2014, to begin processing water and sewer rate and CCN related matters on the transfer date.
- The PUC processed 26 rate-related matters and 18 CCN-related matters, during the first quarter of fiscal year 2015.
- The PUC opened new projects to amend the PUC's rules to implement the Class A, B and C utility classifications, which will require at least 12 new FTEs.
- A workshop is planned on January 27, 2015, to get input from the public.

Electric

North American Electric Reliability Corporation Interconnections

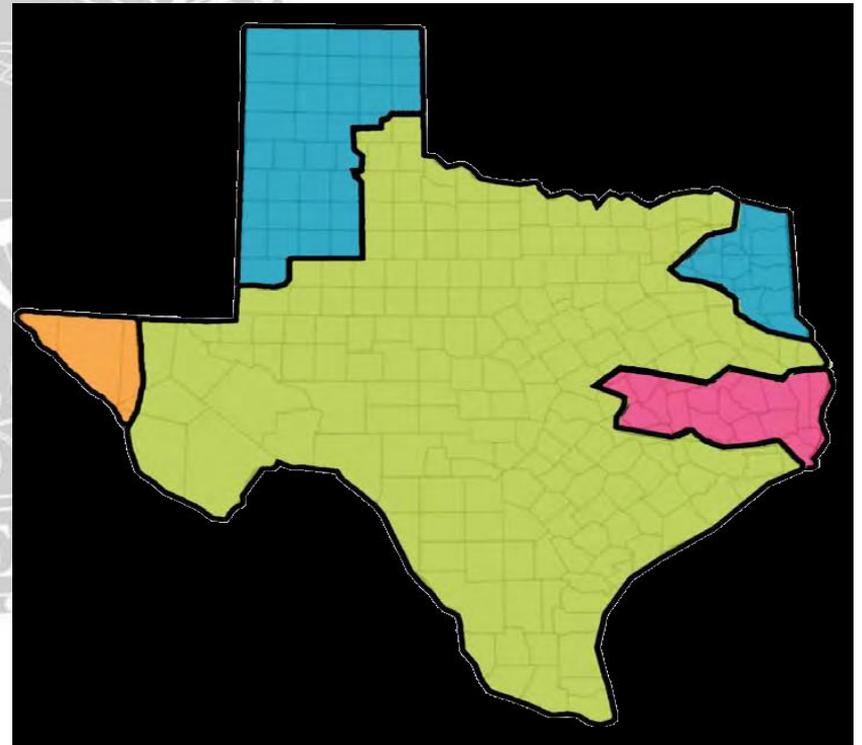


Electric Regions



Texas Electric Footprints

- SPP – SWEPCO and SPS
 - Blue
- MISO – Entergy
 - Pink
- WECC – El Paso Electric
 - Orange
- ERCOT
 - Green



Transmission Operators

- Transmission Operators are the "air traffic controllers" of the electric power grid.
- RTOs/ISOs independently operate the grid, balancing supply and demand at every moment in time.
 - SPP: Regional Transmission Operator
 - MISO: Regional Transmission Operator
 - ERCOT: Independent System Operator

SWEPSCO (AEP)

- Vertically integrated utility subject to full regulation by the PUC
- Texas generation:
 - Pirkey (Lignite) – 580 MW
 - Knox Lee (Gas) – 469 MW
 - Wilkes (Gas) – 830 MW
 - Welsh (Coal) – 1,584 MW
 - Lone Star (Gas) – 50 MW
- Texas customers also served by coal and gas plants in Arkansas and Louisiana
- Member of Southwest Power Pool



SPS (Xcel)

- Vertically integrated utility subject to full regulation by the PUC
- Texas Generation:
 - Harrington – (Coal) – 1,018 MW
 - Jones – (Gas) – 655 MW
 - Nichols (Gas) – 457 MW
 - Plant X – (Gas) – 412 MW
 - Tolk (Coal) – 1,065 MW
- Texas customers also served from natural gas plants in New Mexico
- Member of Southwest Power Pool



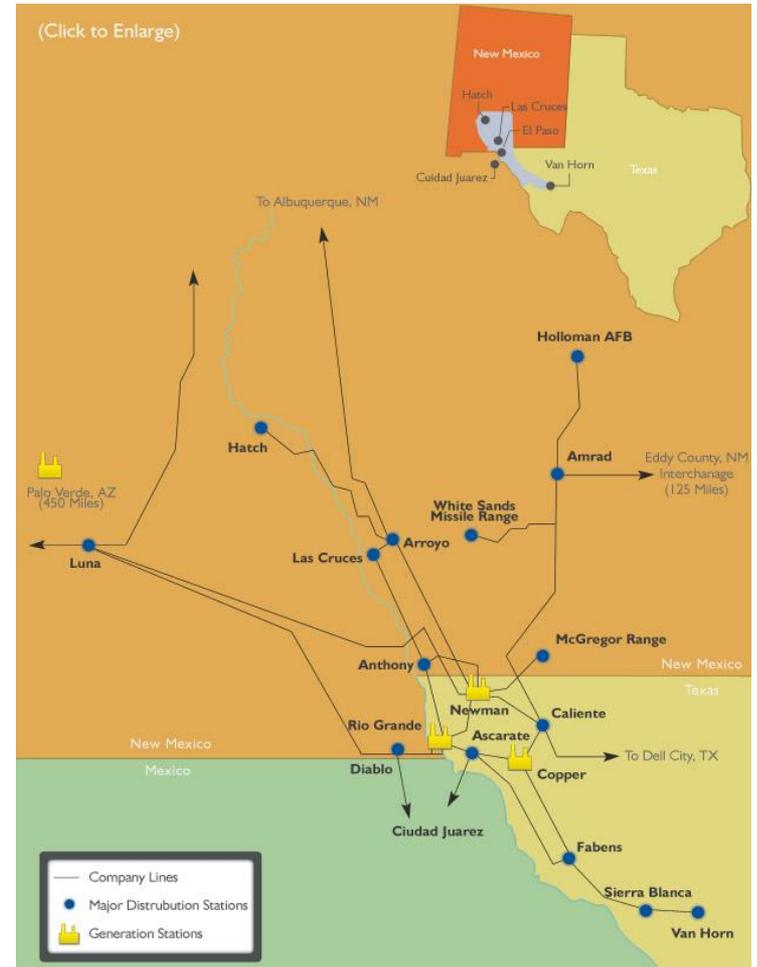
Entergy Texas

- Vertically integrated utility subject to full regulation by the PUC
- Texas Generation:
 - Lewis Creek (Gas) – 461 MW
 - Sabine (Gas) – 1,824 MW
- Entergy Texas customers also served from coal plants and nuclear in Louisiana
- Member of Mid-continent Independent System Operator



El Paso Electric

- Vertically integrated utility subject to full regulation by the PUC
- Texas Generation
 - Newman (Natural Gas) – 732 MW
 - Copper (Natural Gas) – 62 MW
 - Montana (Natural Gas) (352 MW - under construction)
- Texas customers also served from nuclear, coal, and gas plants in New Mexico and Arizona.
- Not a member of a Regional Transmission Organization



ERCOT

- ERCOT is located entirely within the boundaries of the state of Texas and has no AC connections to other states.
- Texas has jurisdiction over the wholesale, retail, and transmission issues within ERCOT.
- Texas is the **only state** in the continental US that has such authority.
- The PUC has very limited authority over municipally owned utilities and electric cooperatives:
 - Wholesale transmission rates
 - Appellate authority over MOUs rates for outside of city customers

ERCOT

- ERCOT serves:
 - **24 million** Texas customers
 - **90 percent** of the state's electric load
 - more than **43,000 miles** of transmission lines
 - **550** generation units

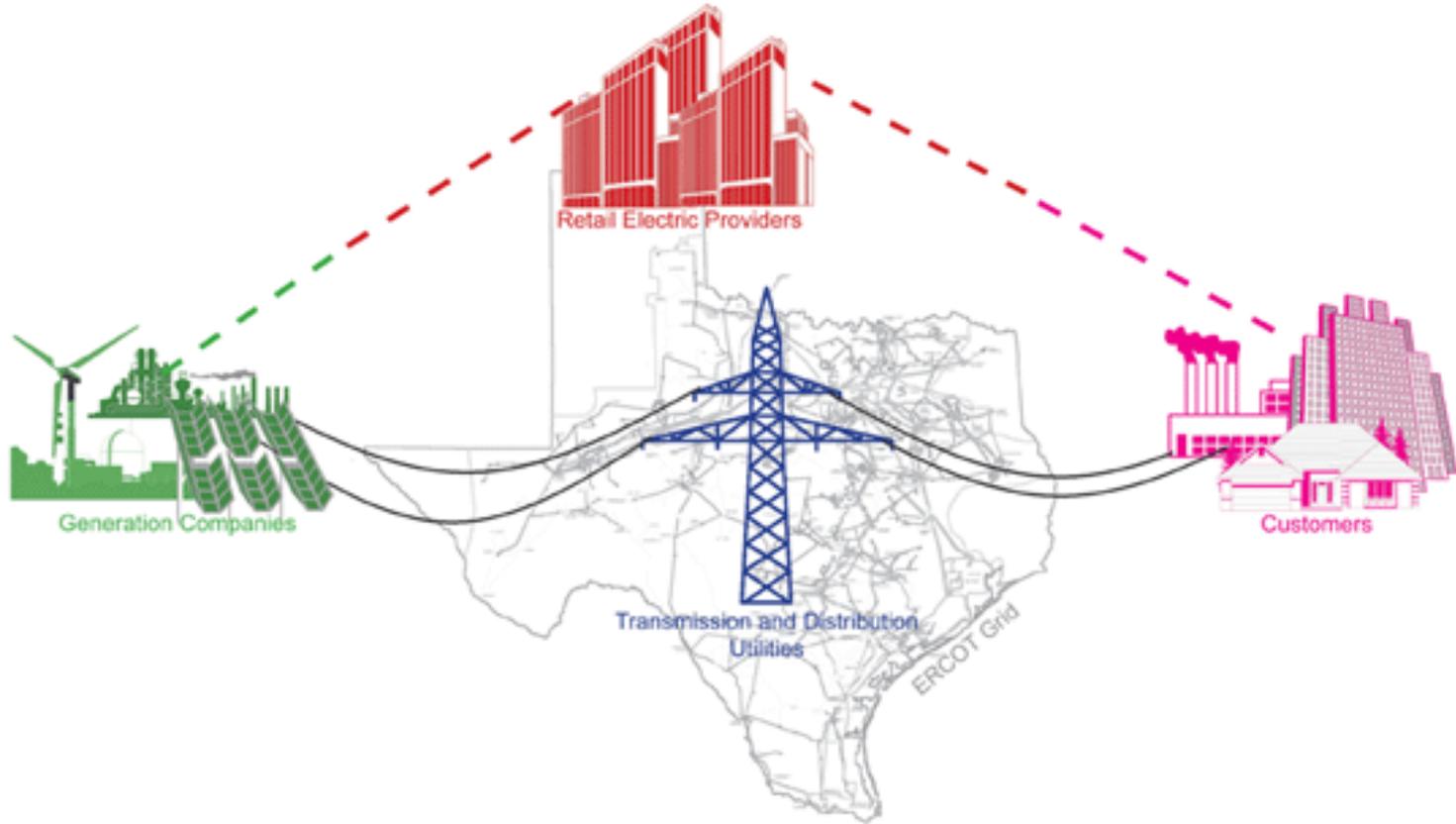


Senate Bill 7

In 1999, the Texas Legislature passed Senate Bill 7 which “unbundled” investor-owned utility services in ERCOT by separating the companies:

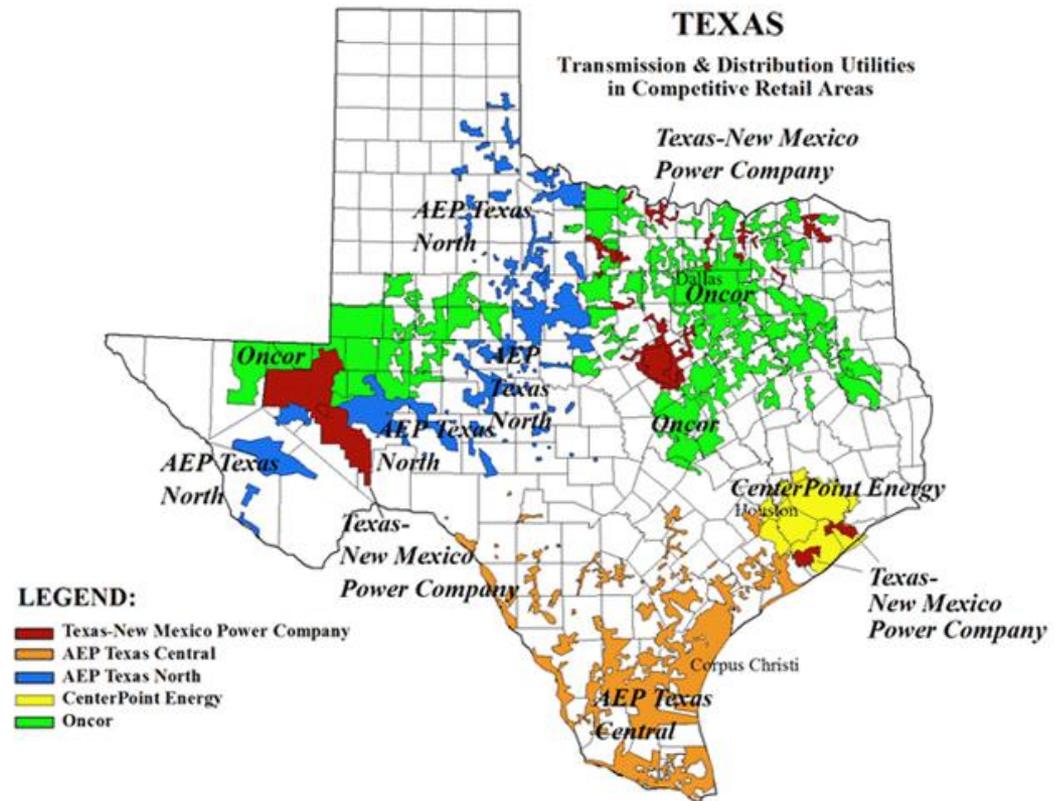
- **Generation**
- **Transmission and Distribution**
- **Retail electric providers**

Competitive Market in ERCOT



The Competitive Market

- The competitive market serves over 6.7 million premises including the population centers of Houston and DFW.



This map doesn't include the Sharyland service territory that transitioned to competition in March of 2014

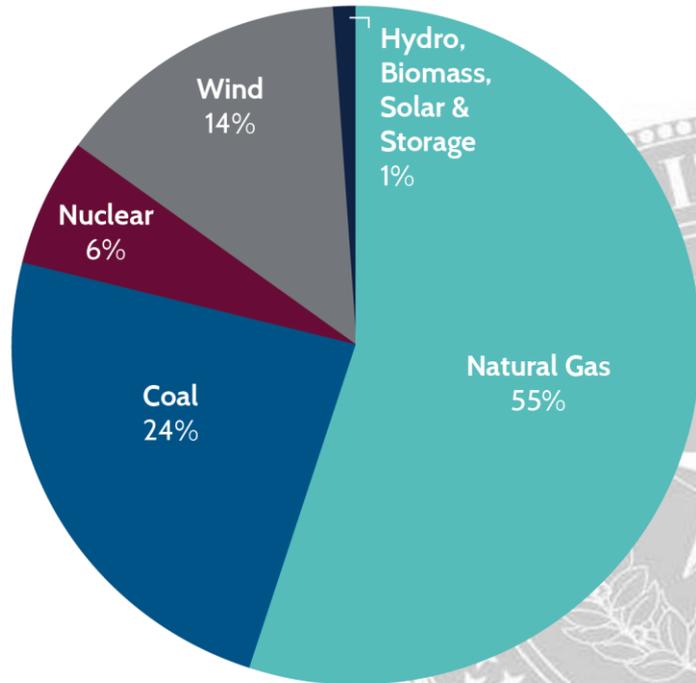
ERCOT Governance

- ERCOT is governed by a board of directors that includes five independent board members, eight market segment stakeholders, the ERCOT CEO (ex officio), the Public Counsel (ex officio), and the PUC Chairman (ex officio non-voting).
- The Legislature has provided that the Public Utility Commission of Texas has complete authority to oversee and investigate the ERCOT finances, budget, and operations as necessary to ensure ERCOT's accountability and to ensure that ERCOT adequately performs their functions and duties.

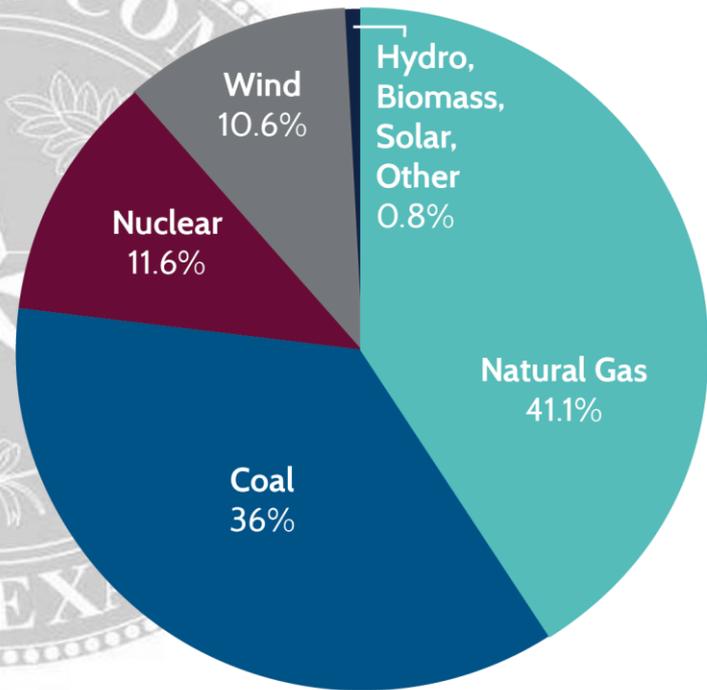
Generation Companies in ERCOT

- Generation units compete with one another in the wholesale electric market.
- There are approximately 550 generators in ERCOT.
- The vast majority of energy is sold through bilateral contracts.
- The remaining energy is sold through a day ahead market, a real time market, and an ancillary service market, all administered by ERCOT.
- Generation prices are not regulated and the risk is borne by generators, not ratepayers.

Generation in ERCOT

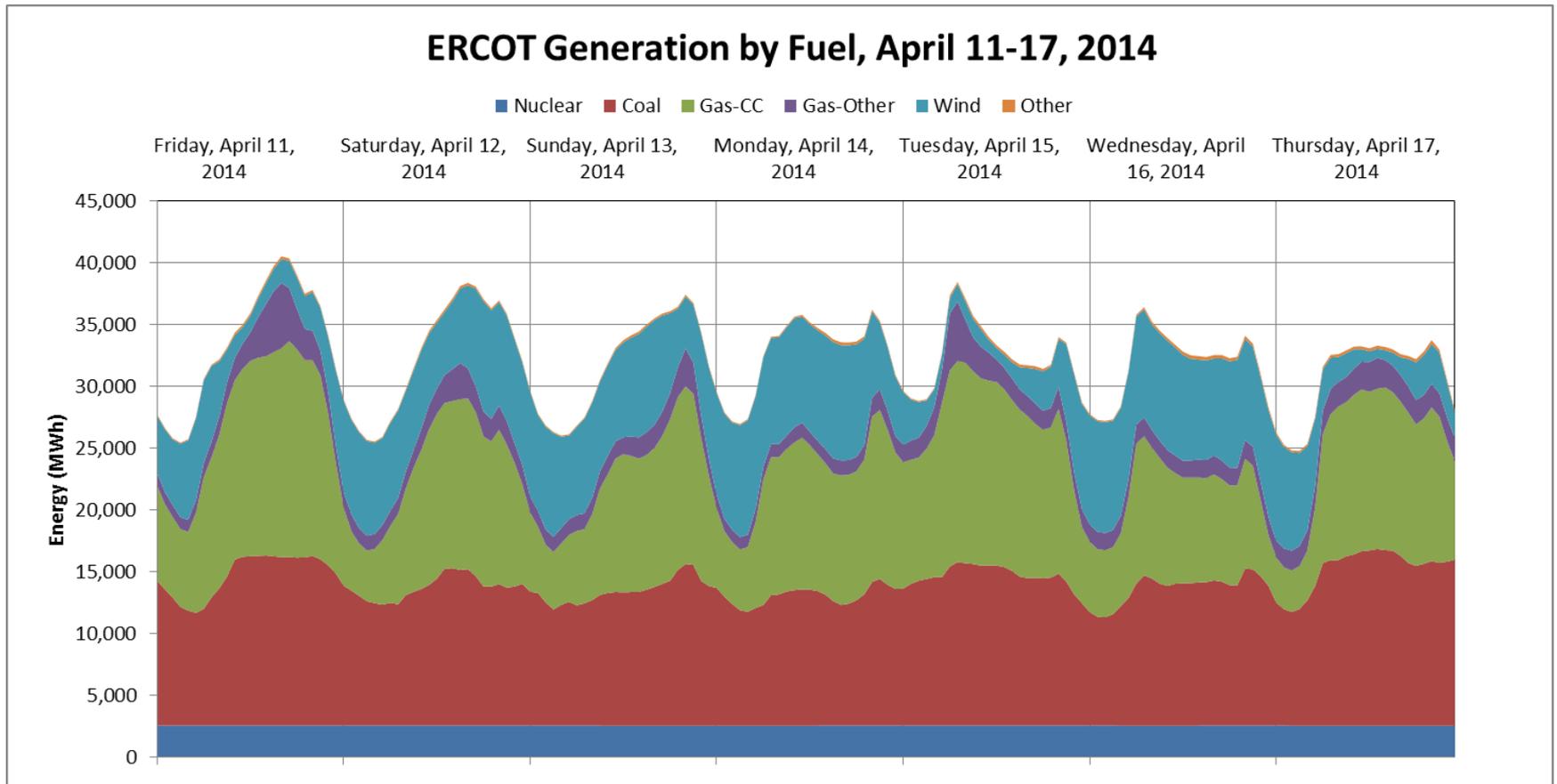


2014 Generation Capacity
effective December 2014

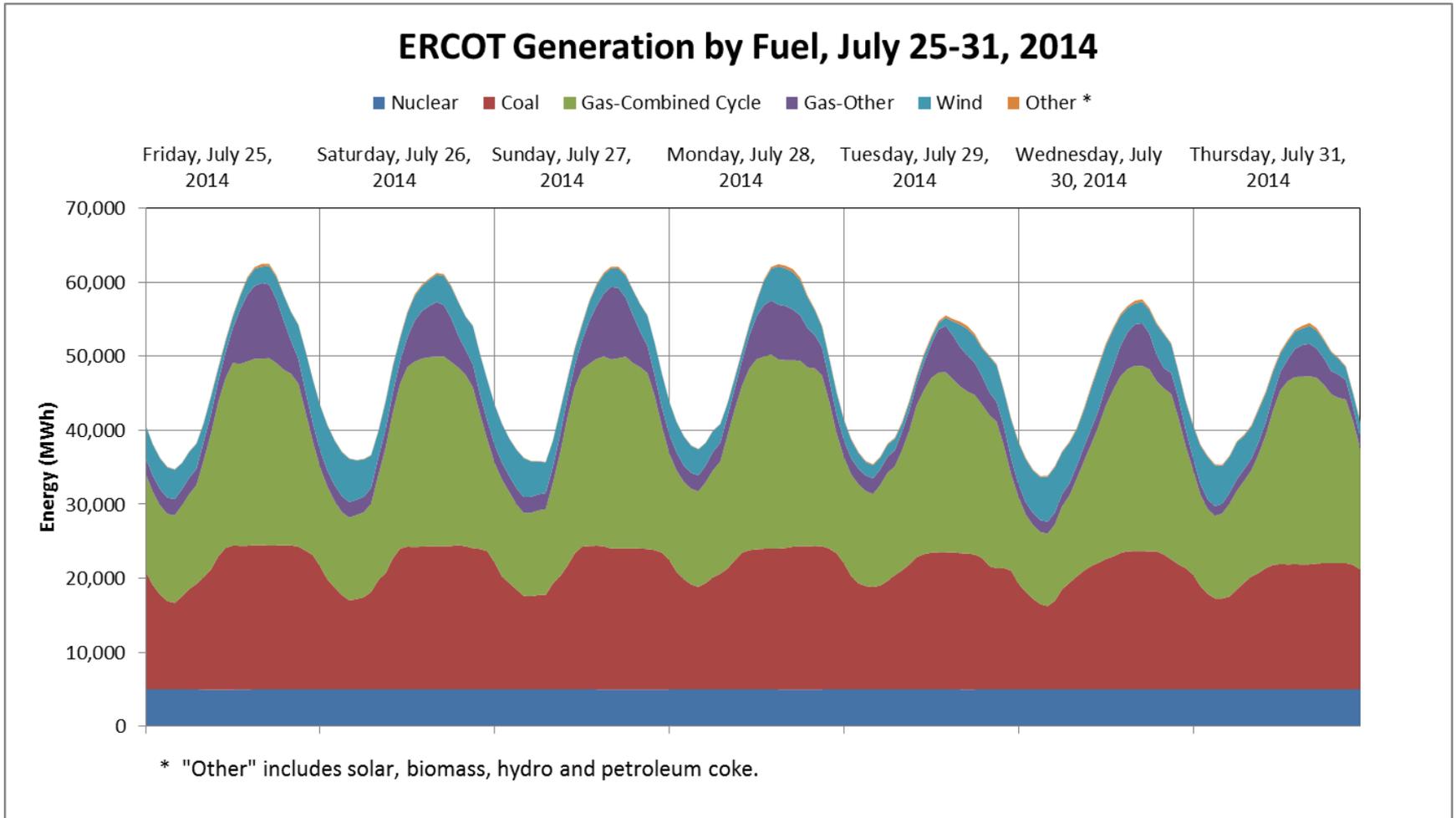


Energy Use 2014

Generation by Fuel – April 11-17, 2014

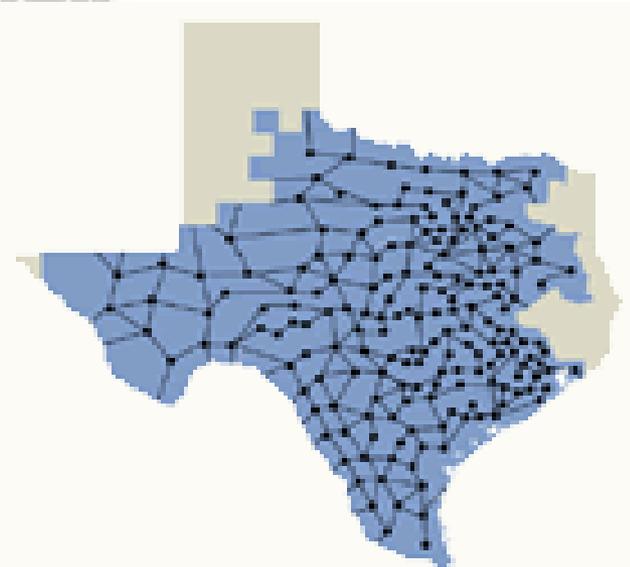
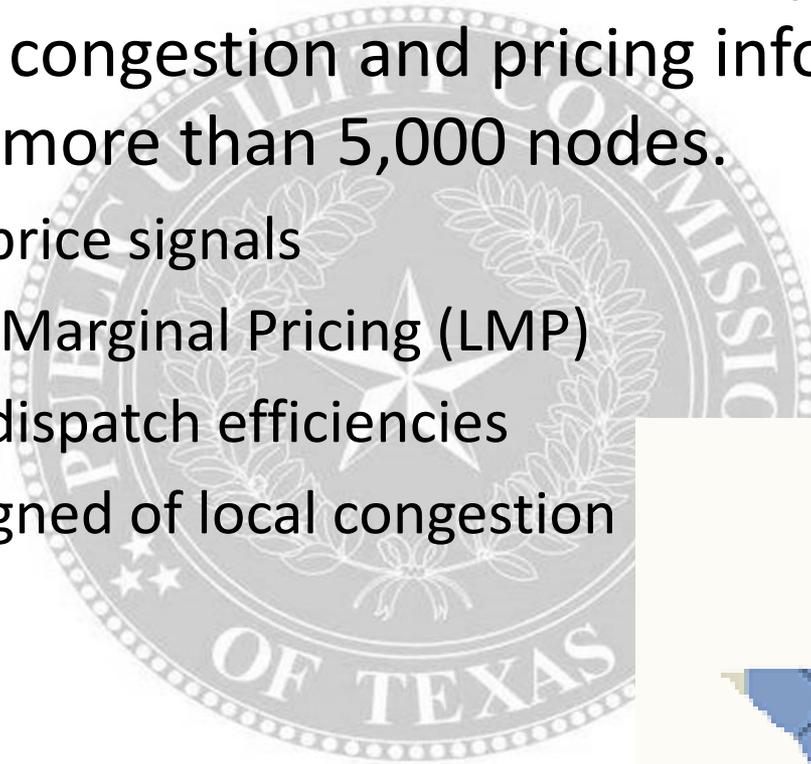


Generation by Fuel– July 25-31, 2014

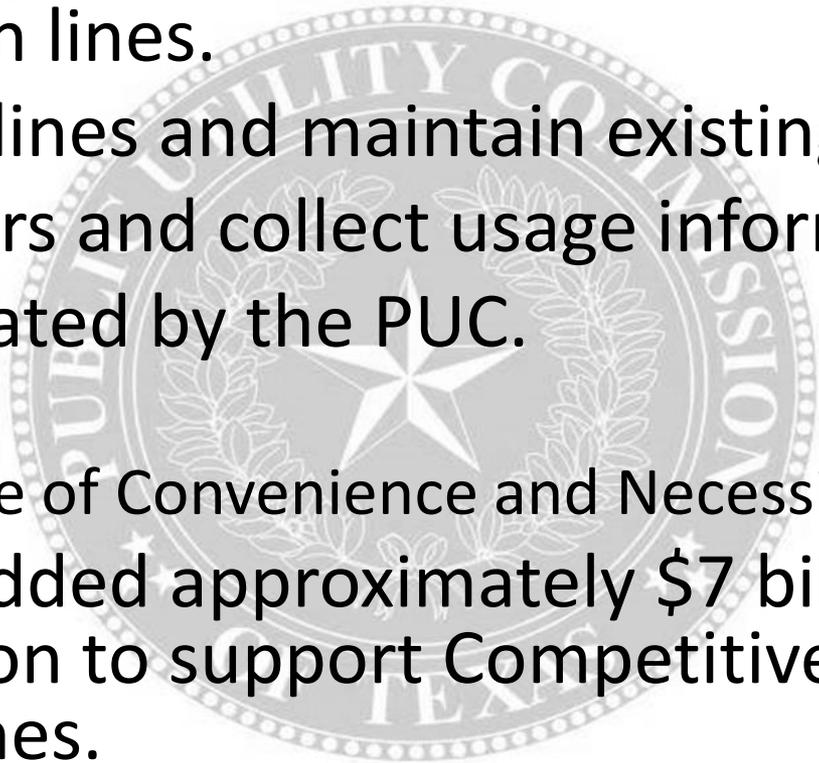


A Nodal Market

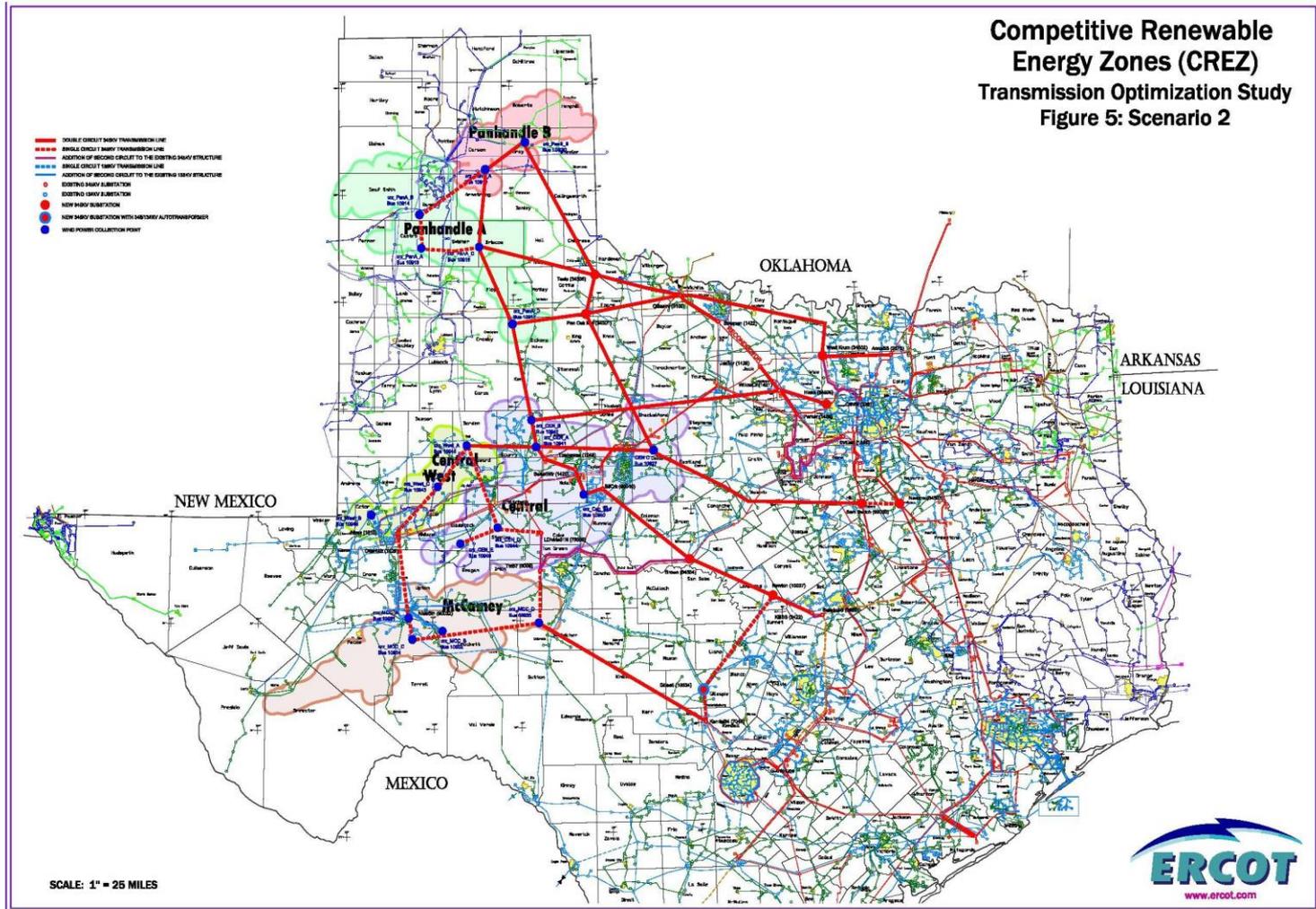
- ERCOT operates in a nodal market, a system in which electric grid congestion and pricing information is captured at more than 5,000 nodes.
 - Improved price signals
 - Locational Marginal Pricing (LMP)
 - Improved dispatch efficiencies
 - Direct assigned of local congestion



Transmission and Distribution Utilities in ERCOT

- Own and operate transmission lines and distribution lines.
 - Build new lines and maintain existing lines.
 - Read meters and collect usage information.
 - Fully regulated by the PUC.
 - All rates
 - Certificate of Convenience and Necessity (CCN)
 - Recently added approximately \$7 billion in new transmission to support Competitive Renewable Energy Zones.
- 
- The seal of the Public Utility Commission of Texas is visible in the background. It features a central five-pointed star surrounded by a circular border with the text "PUBLIC UTILITY COMMISSION" and "TEXAS".

Competitive Renewable Energy Zones (CREZ)



Retail Electric Providers in ERCOT

- REPs compete with one another in the competitive retail market.
- Procure electricity through bilateral contracts and the day ahead and real time markets.
- Interface with end-use customers.
- Required to obtain certification from the PUC; also have some reporting and disclosure requirements.
- REPs are not regulated by the PUC.
- Electric Choice: www.powertochoose.org

Shop. Compare. Choose.

78660
1-10 OF 240
1 2 3 ... >
SORT BY PRICE/kWh
VIEW 10 PER ...
 

REFRESH RESULTS

TDU Area i

ONCOR ELECTR...

Estimated Use i

1,001 - 2,000 kWh

Price/kWh i

¢ to ¢

Contract Length i

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Plan Type i

Fixed Rate

Variable (Changing Rate)

Indexed (Market Rate)

Prepaid Plans i

Show All Plans

Show Only Prepaid Plans

Do Not Show Prepaid Plans

Time Of Use Plans i

Show All Plans

Show Only Time Of Use Plans

Do Not Show Time Of Use Plans

	Company	Plan Details	Price/kWh ▲	Pricing Details	Ordering Info
<input type="checkbox"/>	 COMPLAINT SCORE i (1) (2) (3) (4) (5) HISTORY i	<ul style="list-style-type: none"> • Gexa Choice 9 • Fixed Rate • 9 Months • 6% Renewable 	1,000 kWh 6.7¢ 500 kWh 2000 kWh 10.3¢ 8¢	Minimum Usage Fees / Credits Cancellation Fee: \$150.00 Fact Sheet  Terms of Service 	Special Terms (866) 329-4392 OR SIGN UP
<input type="checkbox"/>	 COMPLAINT SCORE i (1) (2) (3) (4) (5) HISTORY i	<ul style="list-style-type: none"> • Star "Secure" 3 month plan • Fixed Rate • 3 Months • 10% Renewable 	1,000 kWh 6.7¢ 500 kWh 2000 kWh 9.2¢ 6.4¢	Minimum Usage Fees / Credits Cancellation Fee: \$100.00 Fact Sheet  Terms of Service 	Special Terms (866) 917-8271 OR SIGN UP
<input type="checkbox"/>	 COMPLAINT SCORE i (1) (2) (3) (4) (5) HISTORY i	<ul style="list-style-type: none"> • Star "Secure" 6 Month Plan • Fixed Rate • 6 Months • 10% Renewable 	1,000 kWh 7¢ 500 kWh 2000 kWh 9.5¢ 6.7¢	Minimum Usage Fees / Credits Cancellation Fee: \$150.00 Fact Sheet  Terms of Service 	Special Terms (866) 917-8271 OR SIGN UP
<input type="checkbox"/>	 COMPLAINT SCORE i (1) (2) (3) (4) (5) HISTORY i	<ul style="list-style-type: none"> • Infinite Energy All-Inclusive 3 • Fixed Rate • 3 Months • 5% Renewable 	1,000 kWh 7¢ 500 kWh 2000 kWh 9¢ 7¢	Minimum Usage Fees / Credits Cancellation Fee: \$50.00 Fact Sheet  Terms of Service 	Special Terms (877) 674-3489 OR SIGN UP
<input type="checkbox"/>	 COMPLAINT SCORE i (1) (2) (3) (4) (5) HISTORY i	<ul style="list-style-type: none"> • Charitable Saver 9 • Fixed Rate • 9 Months • 11% Renewable 	1,000 kWh 7.4¢ 500 kWh 2000 kWh 10¢ 8.2¢	Minimum Usage Fees / Credits Cancellation Fee: \$20 per month remaining Fact Sheet  Terms of Service 	Special Terms (855) 784-2426 OR SIGN UP

Texas Retail Market Statistics

- More than 300 products are available from more than 40 providers in the competitive areas.
- Approximately 89 percent of eligible Texas residents have chosen non-incumbent providers.
- Approximately 90 percent of eligible consumers in the commercial segment are with non-incumbent providers.
- Approximately 97 percent of eligible consumers in the industrial segment are with non-incumbent providers.

12 Month Fixed Retail Rates

TDU	Price	REP	2001 Reg'd Rate	Change	Inflation Adjusted 2001 Reg'd Rate	Inflation Adjusted Change
AEPC	8.6	Gexa	9.6	10%	12.77	32%
AEPN	8.5	Amigo Energy	10.0	15%	13.30	36%
CenterPoint	7.7	Discount Power	10.4	26%	13.83	44%
Oncor	7.2	Discount Power	9.7	26%	12.90	44%
TNMP	8.3	Gexa	10.6	22%	14.10	41%

As of 1/13/15; 34% inflation since 2001 (Bureau of Labor Statistics)

Regulated Entities vs. Unregulated Entities in the Competitive Market

- Who operates the poles and wires?
 - Transmission and Distribution Utilities have regulated rates that permit the utility a reasonable opportunity to earn a reasonable return on the utility's invested capital used and useful in providing service to the public in excess of the utility's reasonable and necessary operating expenses. TDUs are regulated by the PUC and do not perform competitive functions.

Regulated Entities vs. Unregulated Entities in the Competitive Market

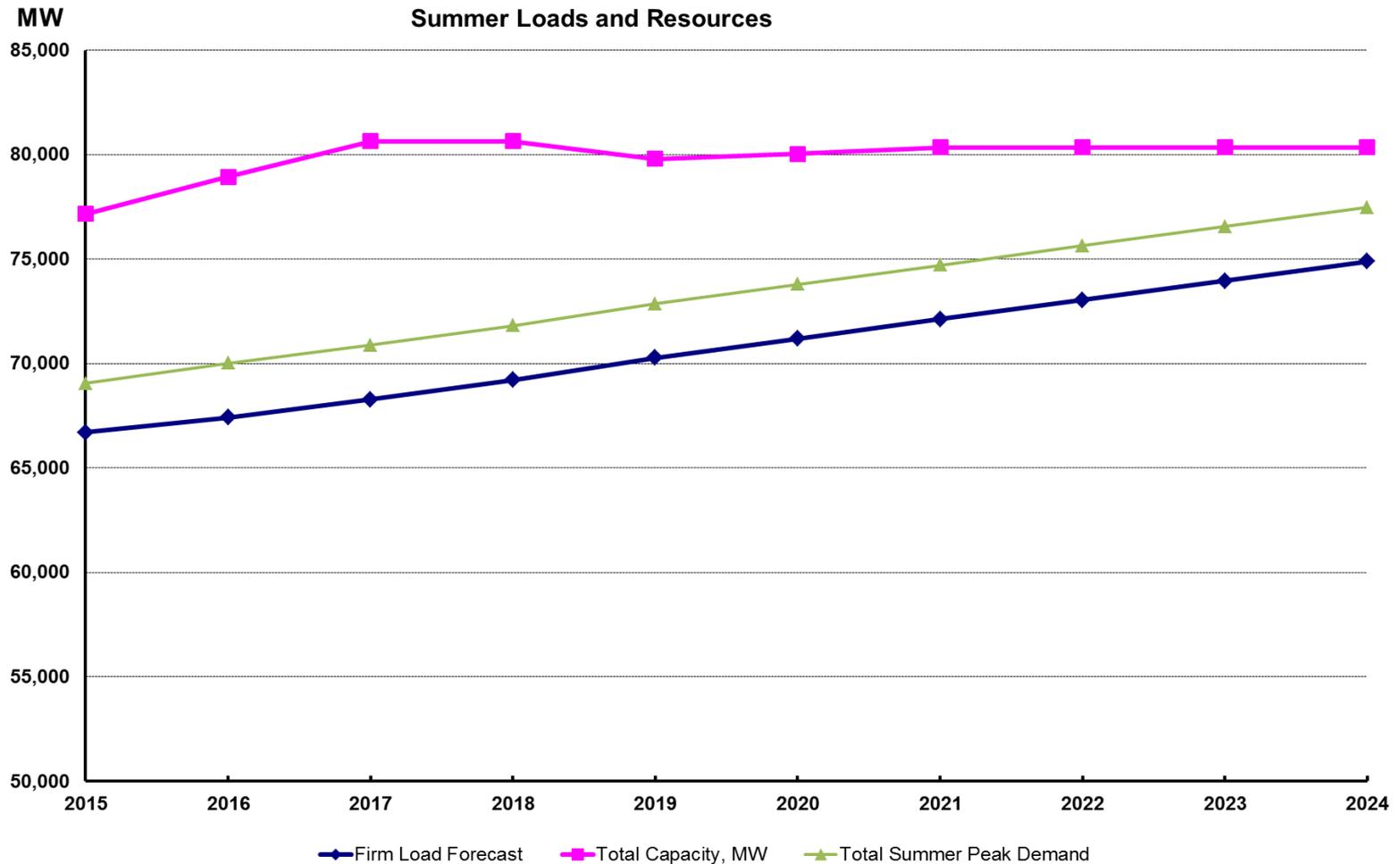
- Who can bid into the market?
 - Since restructuring, competitive entities can bid into the market, whether it is generation, demand response, or storage. A rate of return is not set by the PUC.
- Who has the direct relationship with the customer?
 - Retail electric providers communicate with customers and do not have a rate of return set by the PUC. Under limited circumstances, TDUs communicate with customers.

Electric: Issues Facing Texas

- Demand Growth
- Level Playing Field for Generation
- Fuel Diversity and EPA Mandates



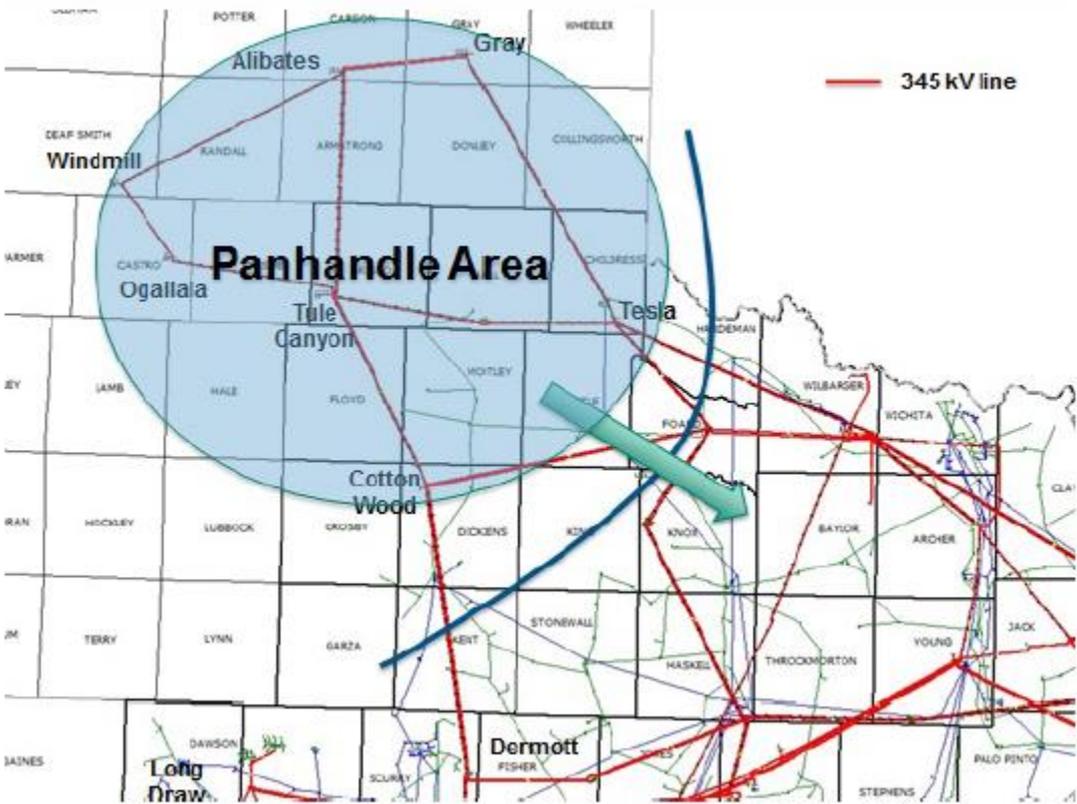
Demand Growth: 2015 Capacity Demand and Reserves



Level Playing Field for Generation

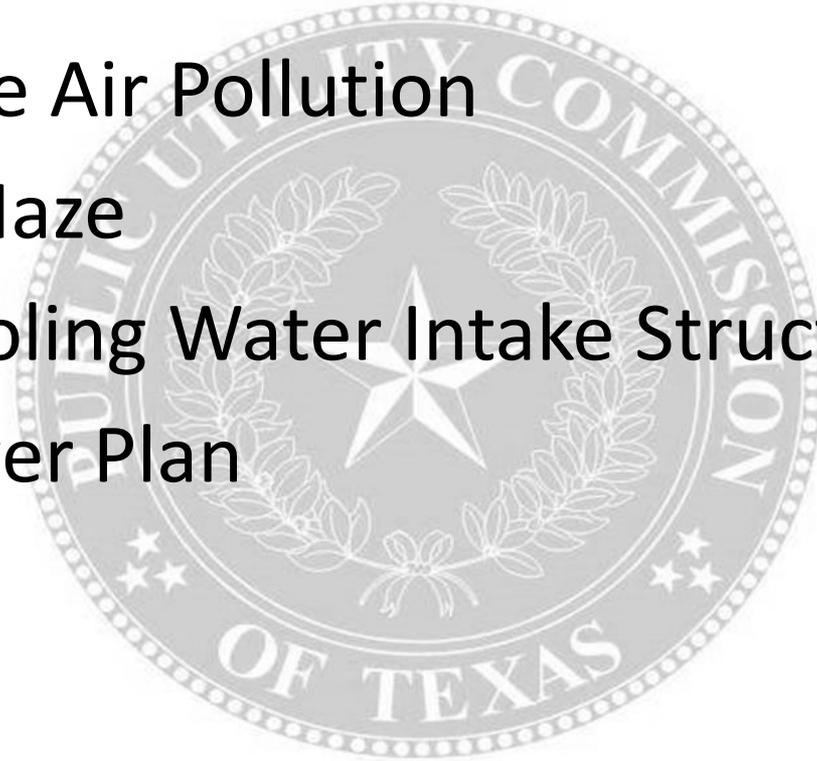
- The PUC intends to make sure that different generation technologies are competing on a level playing field.
- We are looking at:
 - ERCOT's prospective system upgrades.
 - Ancillary services.
 - Transmission planning related to low production cost resources.
 - Impacts of the CREZ build-out, including sub-synchronous oscillation.

PREZ: The Panhandle Segments of CREZ



Pending Environmental Regulation

- Mercury and Air Toxic Standards
- Cross-State Air Pollution
- Regional Haze
- 316(b) Cooling Water Intake Structures
- Clean Power Plan



Clean Power Plan

- What is the Clean Power Plan?
 - In June of 2014, the EPA published a rule that attempts to regulate carbon emissions under Section 111(d) the Clean Air Act.
 - The EPA's four building blocks
 - Improved efficiency of coal plants
 - Redispatch of gas/coal power plants
 - Increased Renewable Energy Production
 - Increased Energy Efficiency

Clean Power Plan

- The rule punishes first movers by not giving credit to states that moved toward a portfolio that is heavy natural gas and renewables, like Texas.
- The rule mandates that Texas reduce carbon emissions by 42 percent.
- The rule mandates that Texas redispatch resources, based on fuel type, which is contrary to ERCOT's economic dispatch.

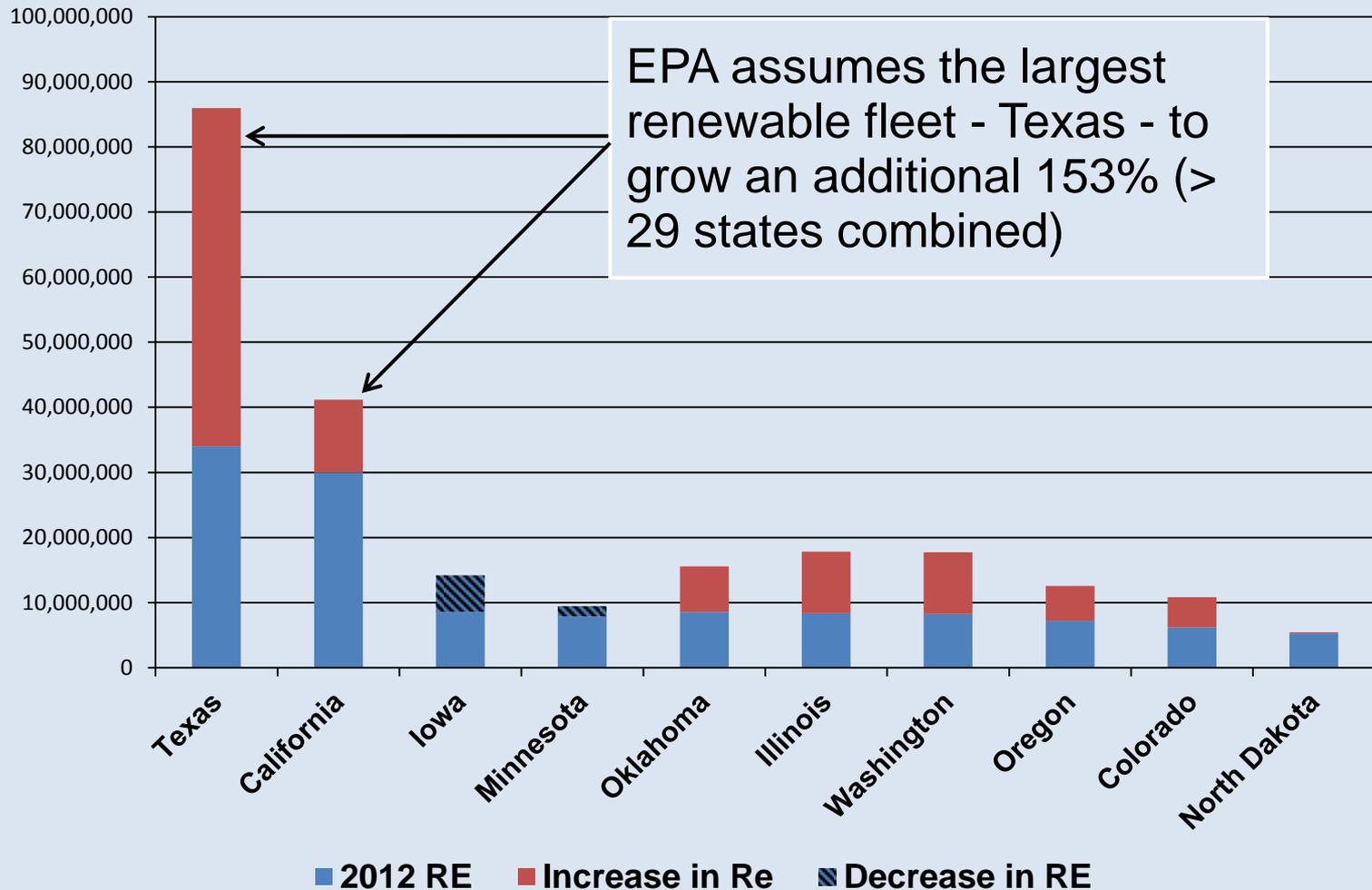
Clean Power Plan

- Texas has 11% of the country's electric generation, yet the EPA requires Texas to contribute almost 18% of the emissions reductions in this proposed rule.
- The rule would preempt the Texas Legislature's authority to set Texas' Renewable Portfolio Standard (RPS) and Energy Efficiency Standards.

Clean Power Plan

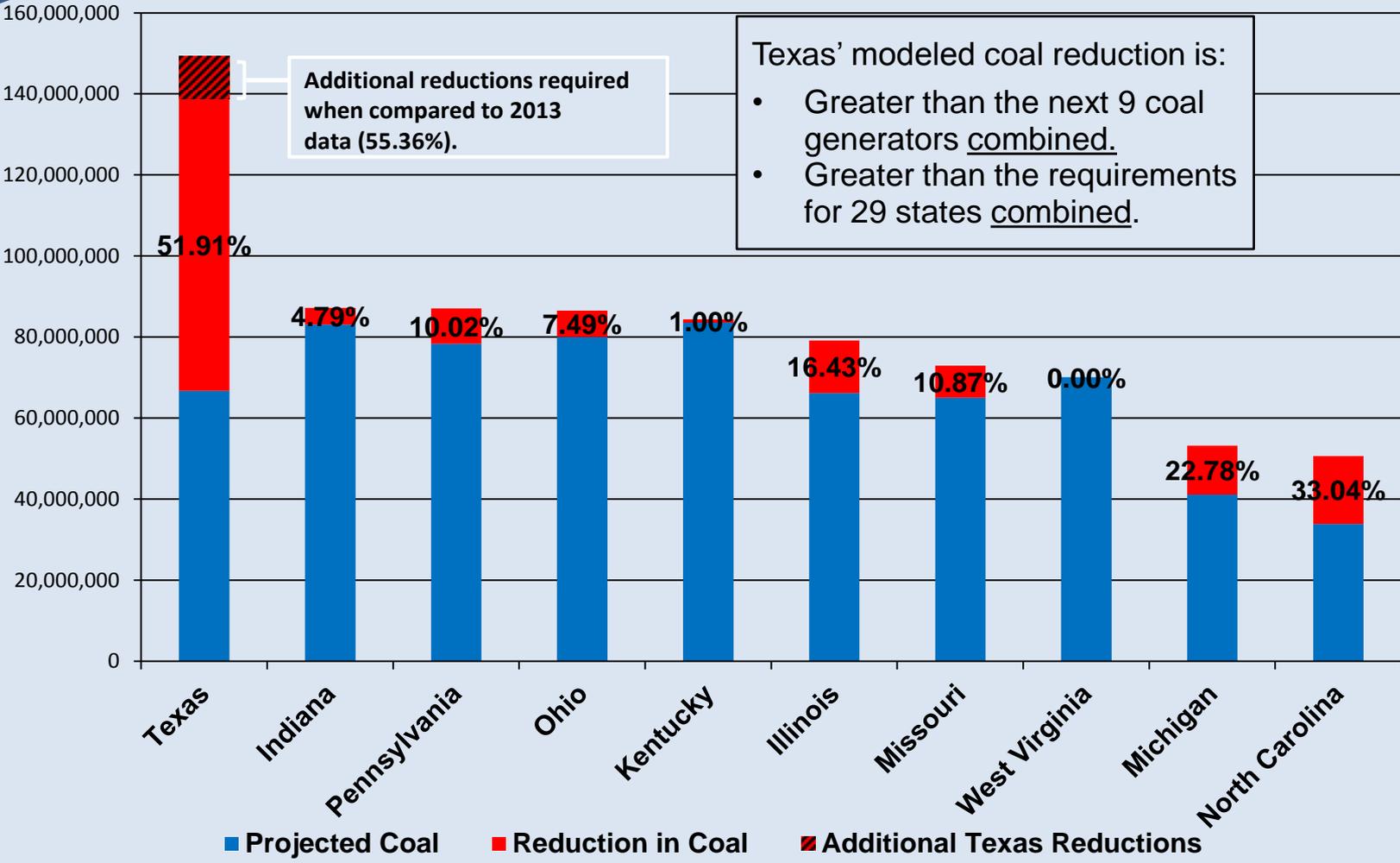
- The EPA is requiring reductions based on a 2012 baseline.
- Any emissions efficiencies or renewable energy installations (including the vast majority of our wind fleet) that were completed before 2012 will not be taken into account.
- The EPA is basing the emissions reductions on a 2005 baseline and will take credit for all of Texas' efficiencies since 2005.

Clean Power Plan: Increase in Renewables



*The EPA's renewable mandate is based on a capacity goal in Kansas.

Clean Power Plan: Decrease in Coal Generation



Economic vs. Environmental Dispatch

- All resources in ERCOT, including generation and demand response, bid into the ERCOT market every 5 minutes.
 - **ERCOT accepts the bids of the resources that are most economic.**
- Instead of having economic dispatch within ERCOT, the Clean Power Plan requires environmental dispatch, where resources are dispatched based on a mandate from the EPA.

Reliability: SPP

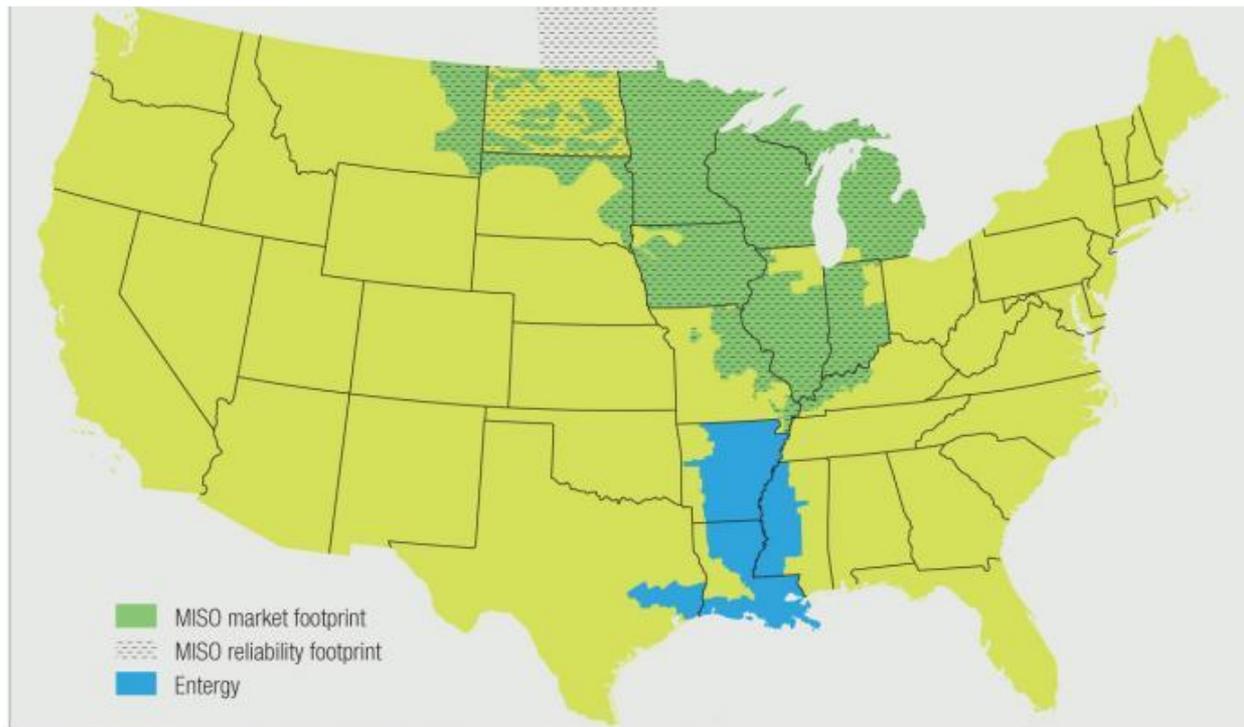
- SPP anticipates:
 - Its reserve margin would plummet to 4.7% from 13.6% by 2020—8.9% below its minimum reserve margin requirement.
 - A capacity margin deficiency of approximately 4,500 MW.
 - By 2024, SPP expects that its reserve margin would further drop to -4.0%, which represents **a capacity margin deficiency of approximately 10,000 MW.**
 - The assumed plant retirements in its region would result in significant reactive power deficiencies, the most notable of which were in the Texas Panhandle region.

Case Study: SWEPCO (AEP)

- SWEPCO anticipates:
 - Retiring almost 2,200 MW of generation by 2020, which is:
 - 39% of SWEPCO's total installed capacity
 - 100% of baseload generation in Texas
 - The East Texas pocket of SPP will not have any generation capacity causing:
 - Reliability concerns
 - Voltage control issues

Reliability: MISO

MISO anticipates retiring an additional 14,000 MW of coal generation.



Reliability: ERCOT

- ERCOT anticipates:
 - Up to half of the existing coal capacity to be retired.
 - Challenges to the reliable operation of the grid.
 - New wind and solar resources will increase the challenges of reliably operating all resources.
 - The loss of reliability services provided by retiring units will strain ERCOT's ability to integrate new renewable resources.

Cost

- The Brattle Group estimated that ERCOT and SPP energy prices will increase by at least \$10-\$18 per MWh in 2030.
- \$35 per MWh is more realistic, according to some stakeholders.
 - **That means a projected increase from 25% to almost 90%, up to \$15 billion annually.**
- ERCOT estimates that the Clean Power Plan alone can increase customer prices by up to 20 percent by 2020.
 - These estimates do not account for the associated costs of transmission upgrades, higher natural gas prices caused by increased natural gas demand, procurement of additional ancillary services, energy-efficiency investments, or the capital costs of new generation capacity.

Clean Power Plan Key Dates

- **January 2015**

- EPA began the regulatory process for proposing a federal plan to meet goals for cutting carbon pollution from existing power plants.

- **Summer 2015**

- EPA to issue final rules on:

- Clean Power Plan for Existing Power Plants in States, Indian Country and U.S. Territories.
- Carbon Pollution Standards for New, Modified and Reconstructed Power Plants.
- EPA plans to propose a federal plan for meeting Clean Power Plan goals for public review and comment.

Clean Power Plan Key Dates

- **Summer 2016**
 - Proposed due date for states to submit compliance plans to EPA
 - these can be complete plans or initial plans with requests for 1- or 2-year extensions. (2-year extensions are only available for multi-state plans)
 - EPA will be in a position to issue a final federal plan for meeting Clean Power Plan goals in areas that do not submit plans.
- **Summer 2017**
 - Proposed due date for compliance plans with 1-year extension.
- **Summer 2018**
 - Proposed due date for multi-state compliance plans with 2-year extension.
- **Summer 2020**
 - Proposed beginning of the Clean Power Plan compliance period.

Telecom

- The vast majority of Texans live in a deregulated exchange.
 - 427 exchanges are deregulated
 - AT&T is 100% deregulated
- The PUC oversees the Texas Universal Service Fund.
- The PUC is the franchising authority for a state-issued franchise for the provision of cable service or video service.