WATTS UP?

A Historical Perspective on Electric Competition

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Deregulation Took Hold Among Multiple Industries Prior to the 1999 Texas Electric Choice Act

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Competition Adopted to Reduce Prices and Increase Innovation

- **Federal Telecommunications Act of 1996**: Created competition in local and long-distance telephone markets
- **Natural Gas Policy Act of 1978 and FERC Order 636 in 1992**: Created open-access gas within regulated pipelines in FERC markets
- **Motor Carrier Act of 1980**: Trucking deregulation, replaced price controls previously in place
- **Airline Deregulation Act of 1978**: Eliminated prior regulatory approval for airline routes

Texas Studied Electric Deregulation in Other States

- Legislation was filed in 1997 to deregulate the competitive electric market in Texas
- By 1999, California, Rhode Island, New York, Pennsylvania, and Massachusetts had at least partially deregulated retail electric markets
- Bill authors Sen. David Sibley and Rep. Steve Wolens studied open markets across the world to develop SB 7

Retail Competition Took Years to Implement

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The retail electric market in ERCOT as we know it today took over seven years to implement following the passage of SB 7 in 1999.

May 1995
Wholesale competition legislation passed (SB 373)

June 1999
Retail competition legislation passed (SB 7)

Sep. 1999
ERCOT electric rates locked in

July 2001
Texas Choice pilot program begins

Jan. 2002
Retail choice begins in ERCOT

Jan. 2005
Affiliate REPs allowed to offer non-price-to-beat prices

Jan. 2007
End of price-to-beat

Affiliate REPs (those that were previously part of the regulated market prior to competition) were still price-regulated up until 2007 to incentivize entry of new REPs into the market

Wholesale Competition Came First

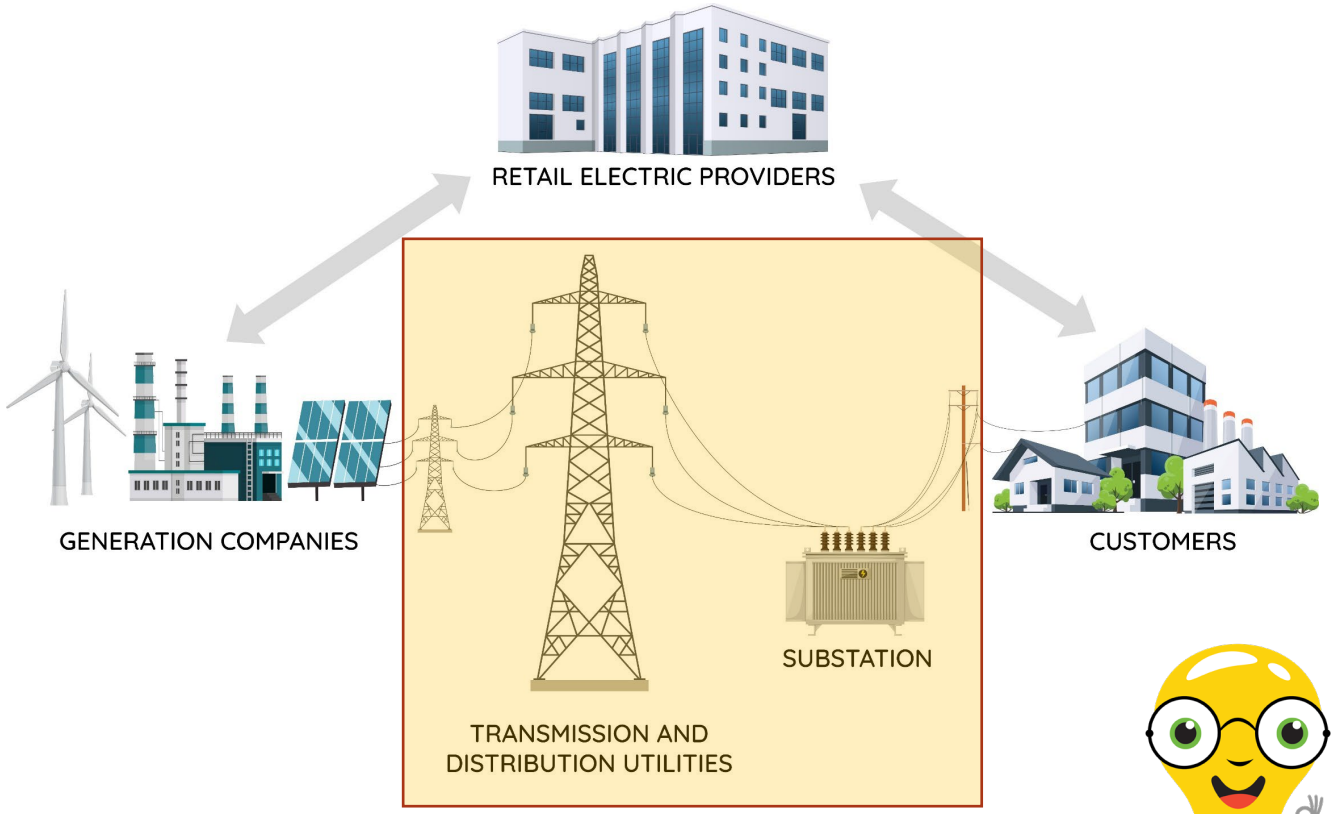
Senate Bill No. 373 enacted in May 1995

- Required utilities to provide non-discriminatory open access transmission to support wholesale competition in ERCOT.
- Recognized new, unregulated participants in ERCOT wholesale market.
  - Exempt wholesale generators
  - Power marketers
- Allowed non-utility wholesale market participants to offer market-based prices in ERCOT.
- Deregulated electric cooperative distribution rates.

Note: Non-ERCOT areas are subject to FERC jurisdiction for wholesale services, including transmission services.

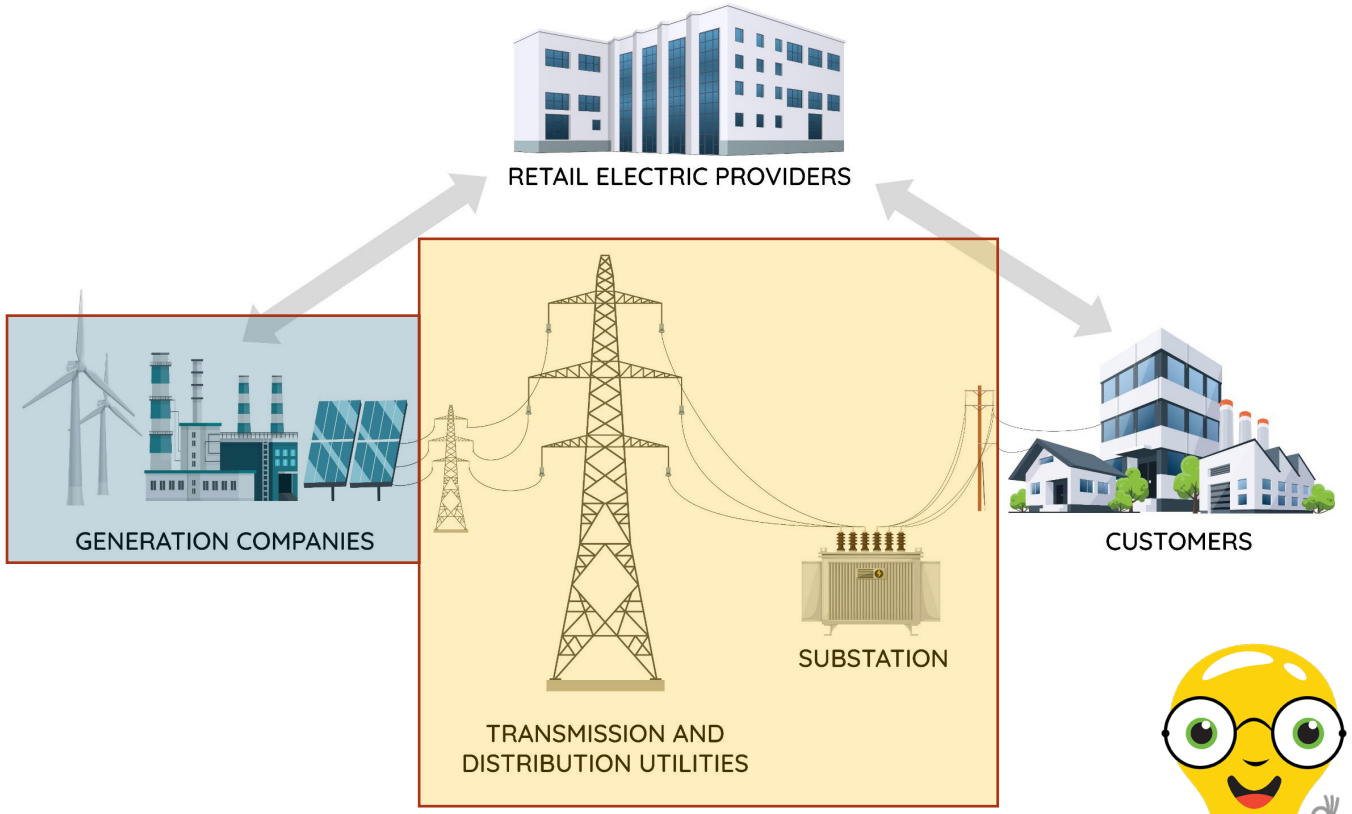
Transmission & Distribution Utilities Remain Fully Regulated for a Reason

- Utilities are required to serve all customers in their territory
- In exchange, the utility is allowed to retain their territorial monopoly and earn a limited profit, which is regulated by the PUC
- This is because it does not make economic sense to have multiple utilities competing to serve each customer over separate, competing transmission lines



Competitive Generators and Utilities Must Operate as Separate Entities

- Transmission & Distribution Utilities are required to provide interconnection to new generation
- Utilities and Generators operate as separate entities to ensure that utilities can not use their regulated monopoly to benefit one generator over another
- Given the importance of electricity, it would be inappropriate for one company to own and control both the generation and delivery of this customer need



Utilities Outside ERCOT Face Significant Barriers to Retail Competition

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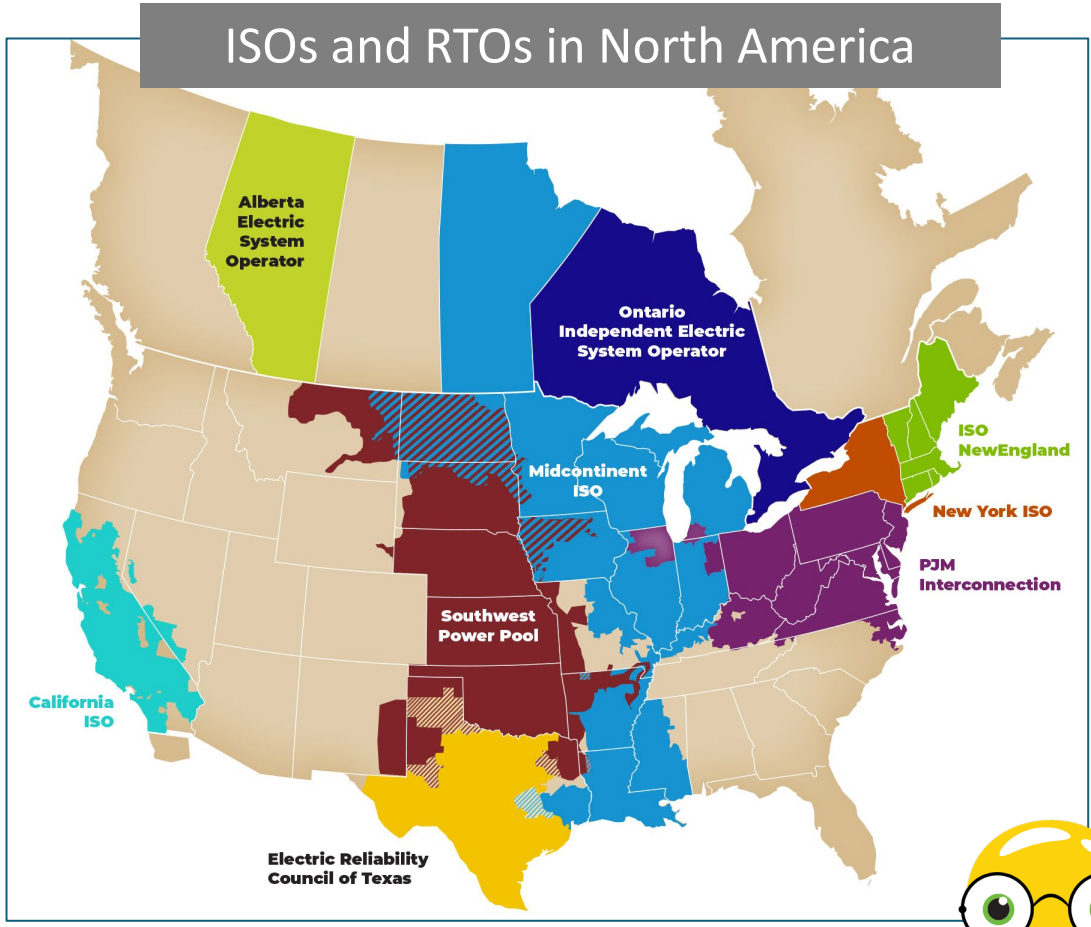
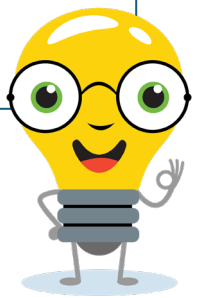
FERC Oversight Creates Multi-Jurisdictional Issues

- FERC regulates the transmission and wholesale sales of electricity in interstate commerce
- The WECC, SPP and MISO electric grids are regulated by FERC, the PUCT and state regulators in each state where they operate
- The PUCT regulates retail rates in non-ERCOT areas, and if the PUC deems an investment to be imprudent, the utility shareholders bear the loss

Other Options: Costs Would Outweigh Benefits

- **Cost of Joining ERCOT**: With very limited interconnections, it would be extremely expensive for a non-ERCOT utility in Texas to join ERCOT
- **Cost of Standalone Retail Competition:** Non-ERCOT utilities would need to be their own "islands" of competition. The cost of developing the technology to allow for retail shopping would likely far exceed the benefit to customers





The Role of ISOs and RTOs in Supporting Competitive Markets

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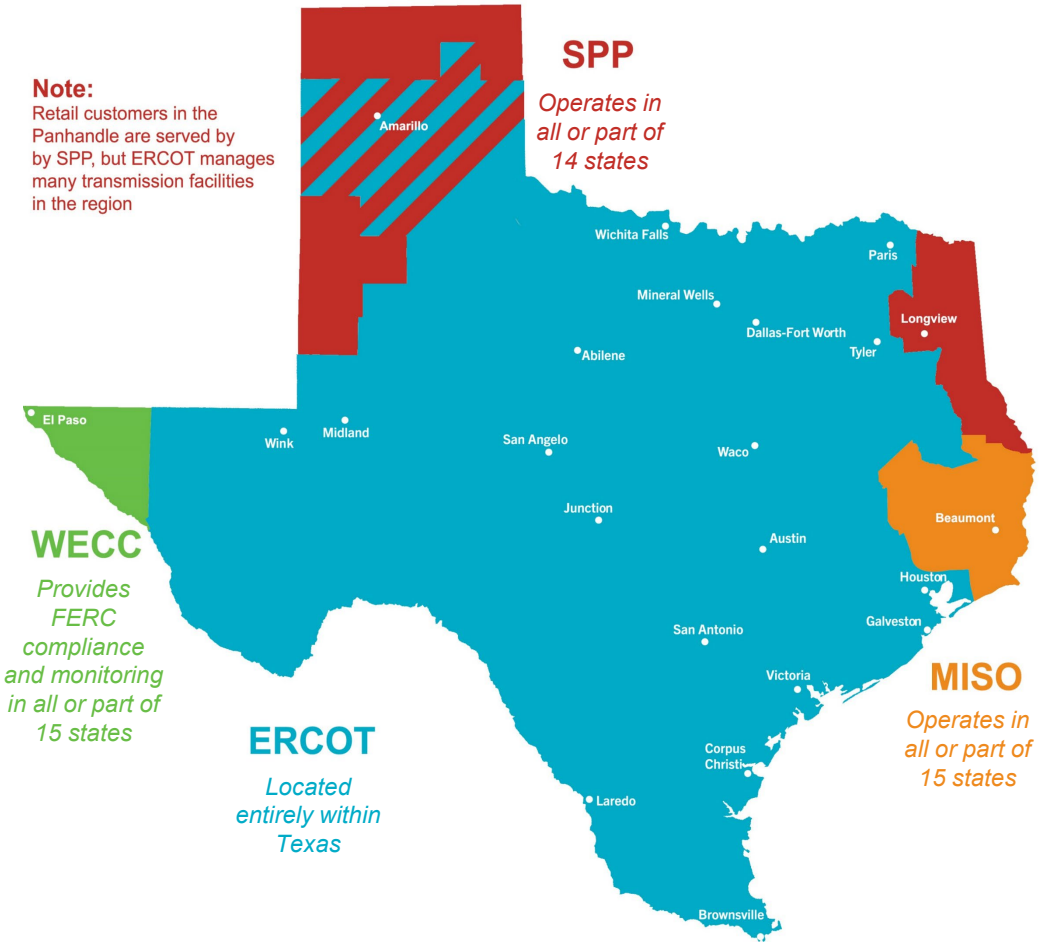
- Most of Texas is served by ERCOT, which manages the flow of electricity from large electric generation to utility distribution networks
- ERCOT is an Independent System Operator (ISO). Regional Transmission Operators (RTOs) are similar entities that operate across multiple states
- ISOs and RTOs throughout the U.S. manage the operations of the competitive wholesale market
- ERCOT is unique in that it supports competitive retail market functions



ERCOT's Role Has Grown to Allow Competitive Markets to Operate

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ERCOT Responsibilities

- System reliability – planning and operations
- Wholesale market settlement for electricity production and delivery
- Retail switching process for customer choice
- Open access to transmission

ERCOT: By the Numbers

- 90% of the electric load in Texas is in ERCOT
- 75% of ERCOT's load is in the competitive market, including 26 million customers
- 710+ generating units, providing 86,000 MW of generating capacity during peak demand
- 46,500+ miles of high-voltage transmission

The Electric Market was Deregulated to Bring Better Prices and Investment

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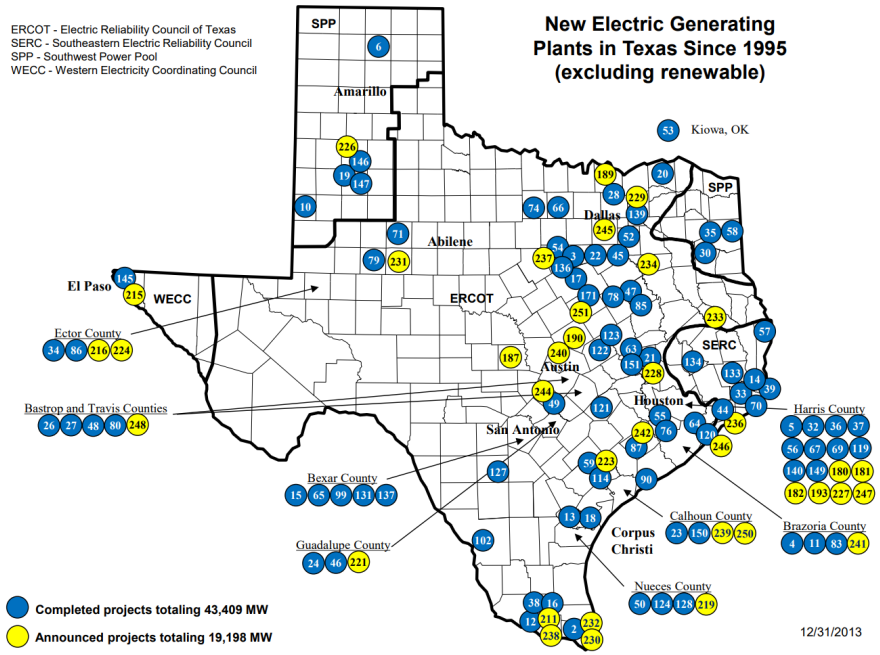
Texas Electricity Prices Have Performed Far Better than the U.S. Average Over 20 Years

- From 2001 to 2021, the U.S. average electricity price has increased by 57%, remaining flat when adjusted for inflation
- Over that same period, Texas average prices have only increased by 26%, and actually dropped by 20% when adjusted for inflation

ERCOT Market Has Seen Significant New Generation Investment Since 2001

- Much of the investment in new, non-renewable generation in Texas occurred from 1995 through 2013
- Efforts to revitalize the competitive wholesale market in ERCOT are ongoing, with a focus on enhancing investment in dispatchable generation



Source: Public Utility Commission of Texas (12/31/2013 Data)

Watt's Next: Electric Competition Will Support the Next Wave of Technologies, If We Do it Right

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Electricity Technology in Transition

- The transmission network in ERCOT has evolved to bring more wind and solar generation from rural areas of the state to population centers
- The local electric utility distribution networks face increasing demand for distributed energy resources, such as rooftop solar, customer-owned generators, home battery storage and the adoption of electric vehicles
- The entire grid is facing rapidly increasing load, due to economic growth, electrification of oil & gas equipment, electrification of heating systems, the interest of Crypto miners in Texas and other factors

How Do We Get There?

- New resources and technologies must be incorporated into the grid safely and reliably, while ensuring that utilities can maintain and grow their distribution systems to bring innovations online
- Both existing and new generation that promotes reliability year-round has to be valued properly in the market, to ensure they can attract investors
- Texas leaders must find the balance between supporting innovation while continuing to support the reliability needed for Texas to attract economic investment. Doing so depends on reliable, sustainable, affordable power and a resilient electric system

How to Reach Us

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