

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

**Market Design 2009: The Texas Competitive  
Electric Market**

*September 17, 2009*

*Commissioner Donna L. Nelson*

*Public Utility Commission of Texas, USA*

"Texas is a state where a dream can be put to work." - Governor Rick Perry



"America's No. 1 State for Economy"

**WISERTrade**  
"No. 1 Exporting State for Seven Straight Years"

**TIME**  
"No. 1 in Projected Job Growth"

**FORTUNE**  
"Most Fortune 500 & 1000 Corporate Headquarters"

**ERNST & YOUNG**  
"No. 1 in U.S. for Attractiveness in Renewable Energy Investments"

**FT**  
FINANCIAL TIMES  
"No. 1 in 'State of U.S. Economy' Report"

**SITE Selection**  
www.siteselection.com  
"No. 1 for Corporate Site Selectors"

Texas leads the nation in homebuilding with more than 63,900 homebuilding permits in the last 12 months, more than California and Florida combined.  
**(John Burns Real Estate Consulting, July 2009)**

Texas was ranked as the 2009 Best Business Climate by Business Facilities magazine.  
**(Business Facilities, July 2009)**

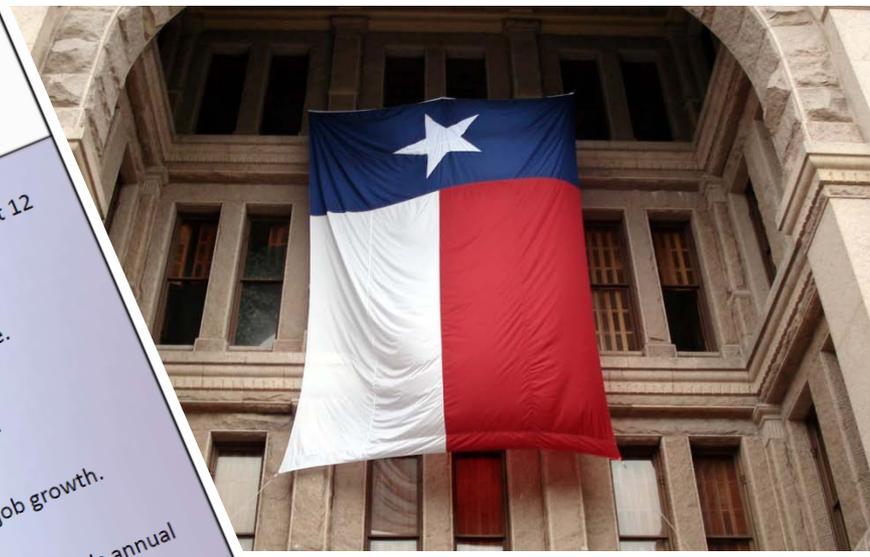
Texas ranks as the No. 1 state for Projected Job Growth from 2009 to 2019.  
**(TIME, May 25, 2009)**

For the fourth year in a row, CEOs rated Texas as the #1 state for business and job growth.  
**(Chief Executive Magazine, March 2009)**

Two Texas metros topped the list for Corporate Facility Project Attraction in Site Selection's annual Governor's Cup competition with Houston ranked No. 1 and Dallas ranked No. 2.  
**(Site Selection, March 2009)**

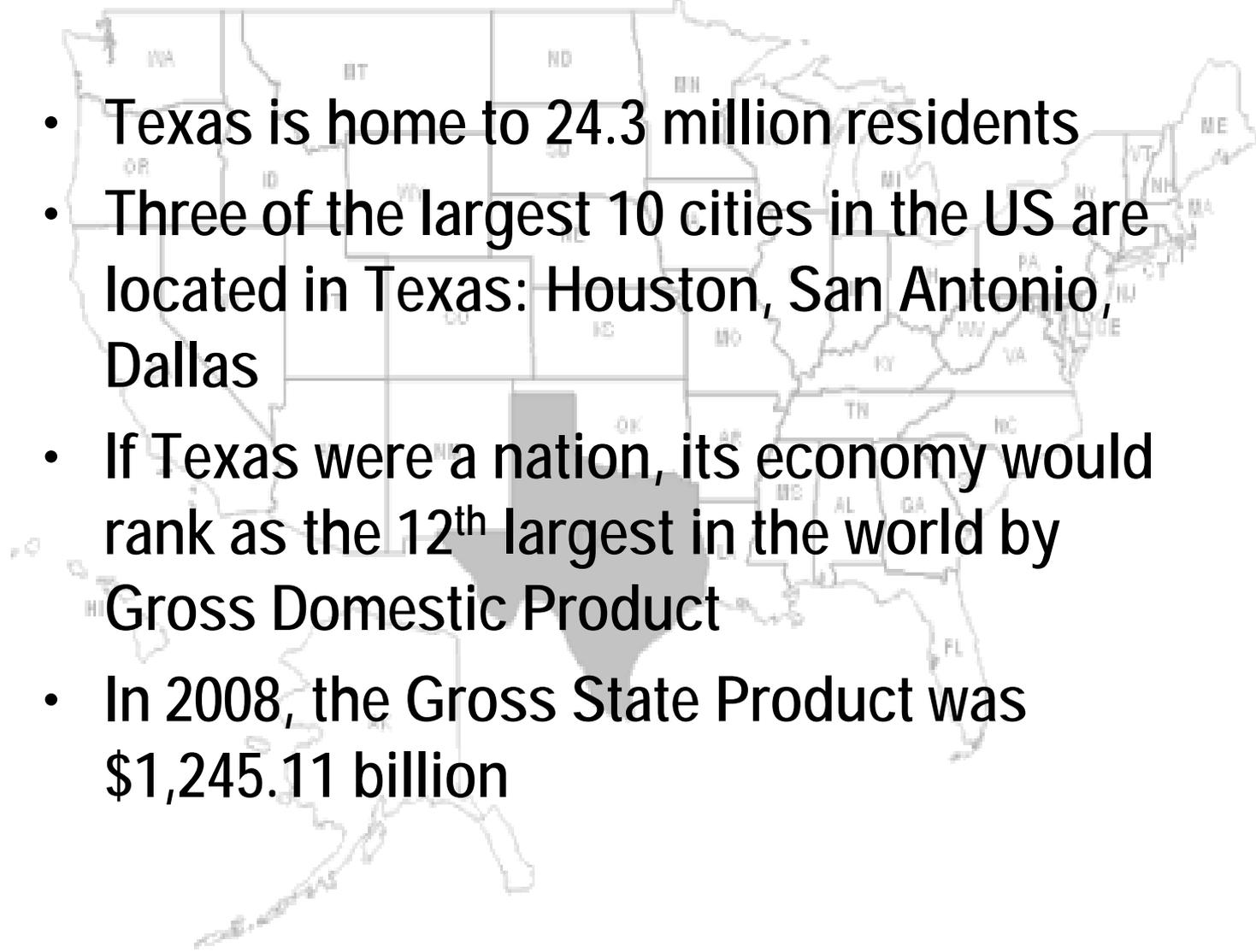
Texas is home to the top five U.S. metros in "The Healthiest Housing Markets for 2009" report. Rankings include: Houston (1), Austin (2), Fort Worth (3), San Antonio (4) and Dallas (5).  
**(Builder Magazine, February 2009)**

Texas is the No. 1 relocation destination in the U.S. for the fourth year in a row based on Allied Van Lines' 41st Annual Magnet Report, which tracks U.S. migration patterns.  
**(SIRVA, Inc., January 2009)**





# Statistics About Texas

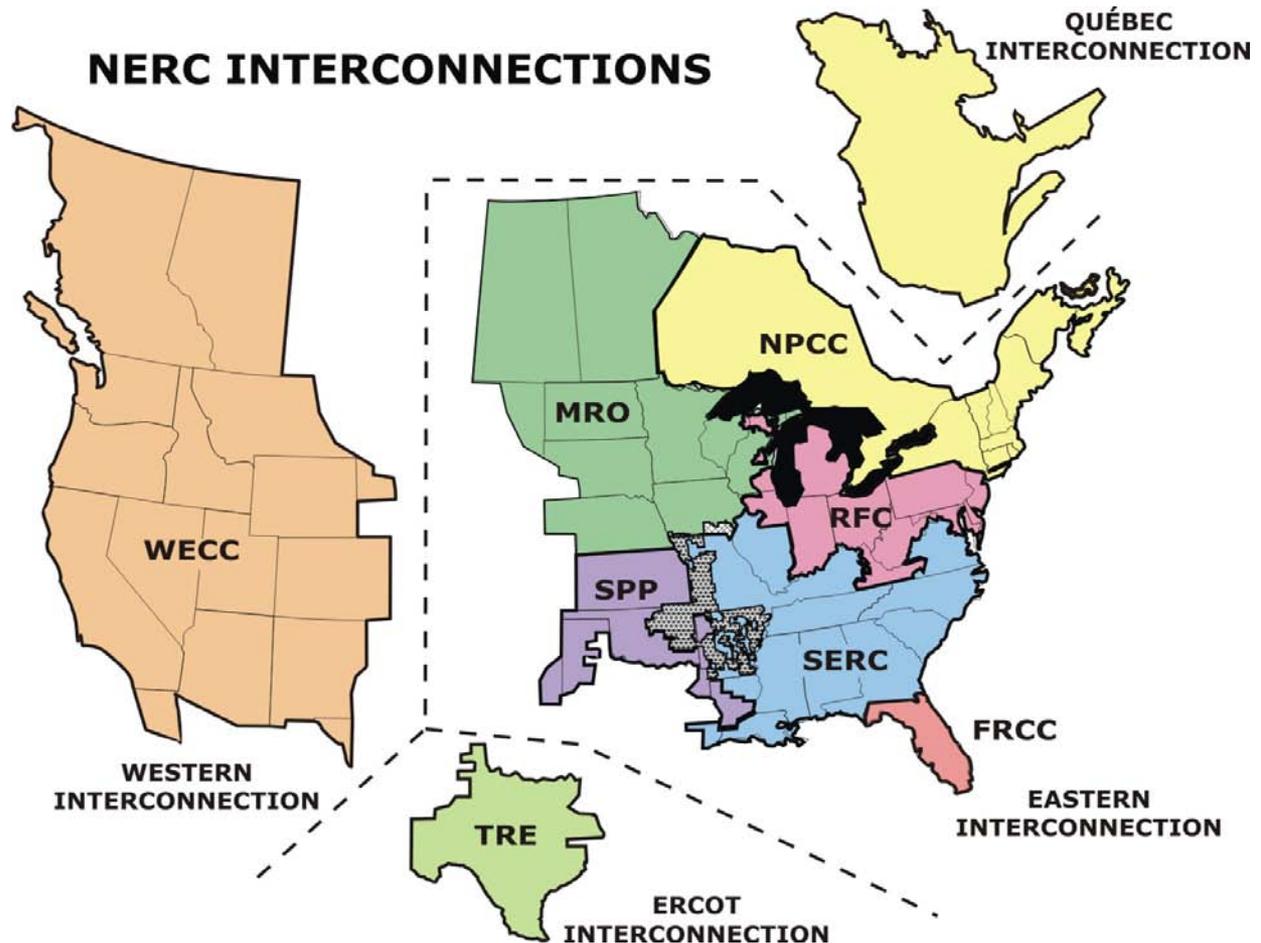
- 
- Texas is home to 24.3 million residents
  - Three of the largest 10 cities in the US are located in Texas: Houston, San Antonio, Dallas
  - If Texas were a nation, its economy would rank as the 12<sup>th</sup> largest in the world by Gross Domestic Product
  - In 2008, the Gross State Product was \$1,245.11 billion

A vertical strip of the American flag is visible on the left side of the slide, showing the blue field with white stars and the red and white stripes.

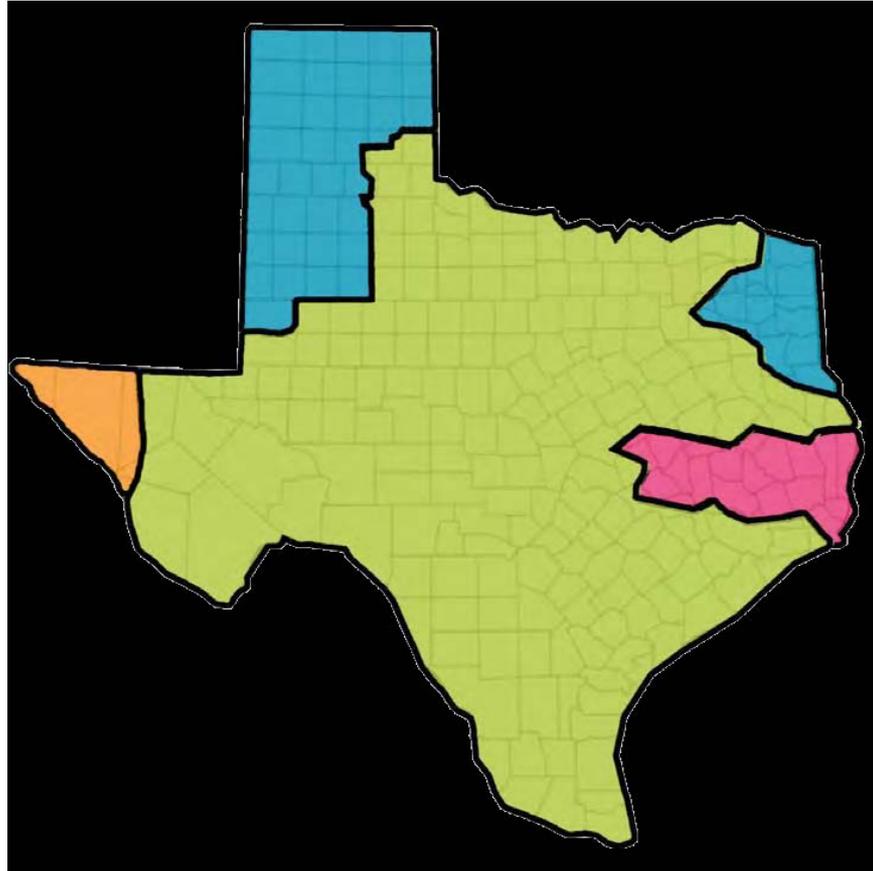
# Today's Topics

- *Texas Deregulated Electricity Market*
- Issues Facing Electric Industry
- Future Developments

# Three electric grids in the U.S. – Eastern Interconnection, Western Interconnection, and Electric Reliability Council of Texas (ERCOT)



# The Texas Electric Market



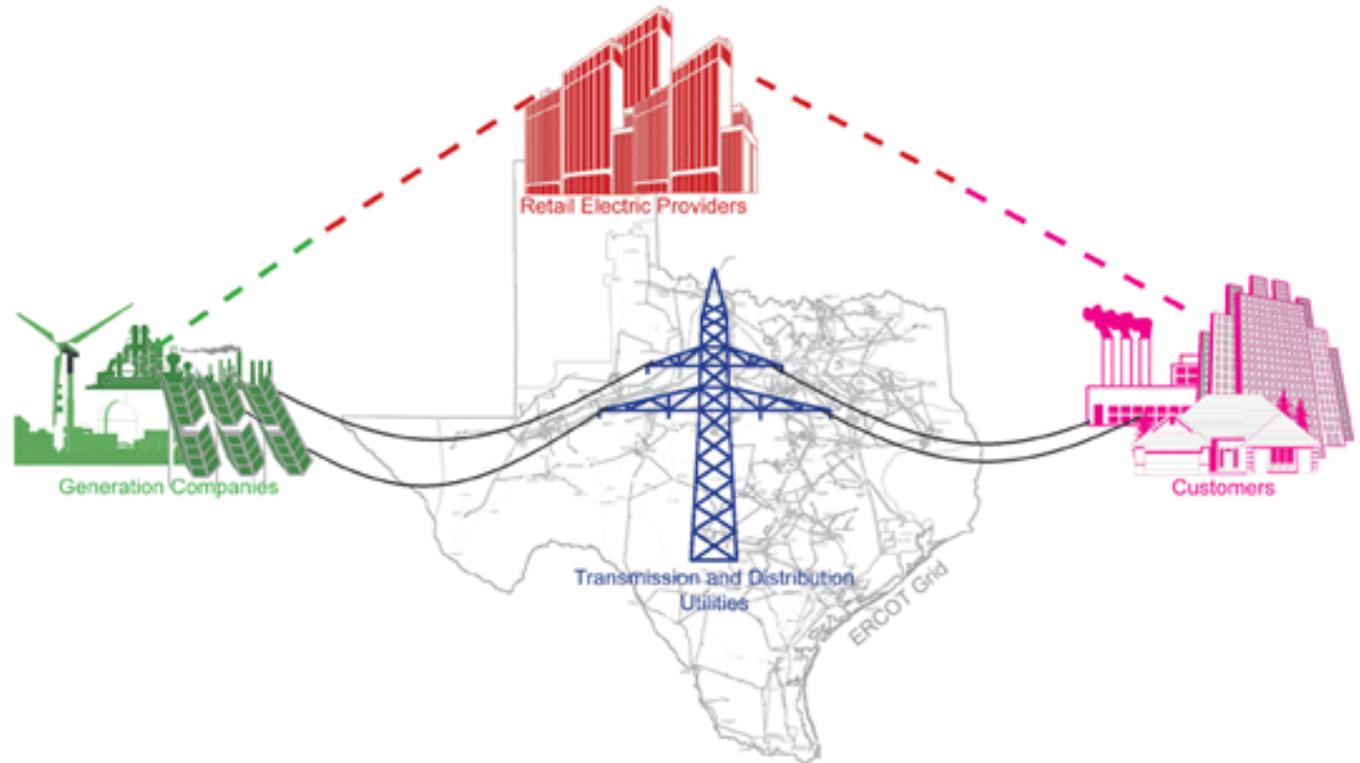
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# Texas Electricity Market Overview

## Four Scenarios

- Municipally-owned utilities
- Member-owned utilities
- Investor-owned utilities outside of ERCOT
- Competitive Market within ERCOT

# Competitive Market in ERCOT





# Texas Customers Like Choice

- In a 2008 poll of registered voters, **80 percent** favor a competitive electricity market
- Approximately **44 percent** of eligible Texas residents have chosen non-incumbent providers
- Approximately **70 percent** of eligible consumers in the commercial and industrial segment are with non-incumbent providers

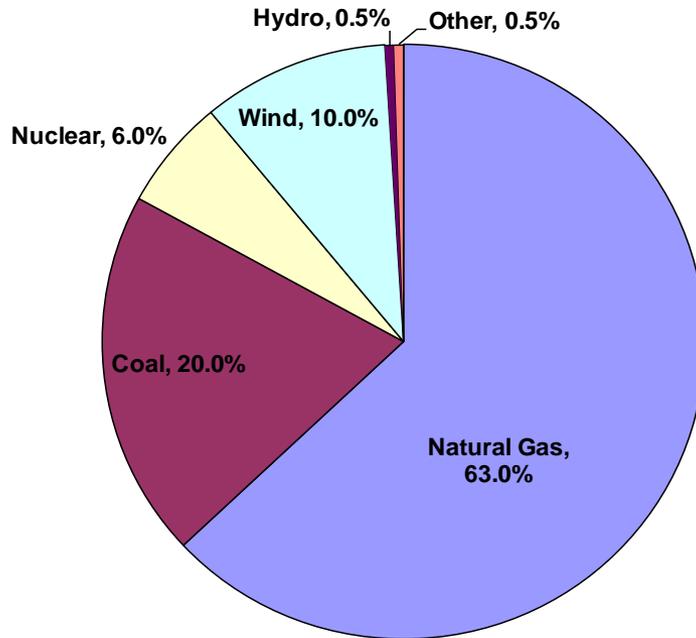
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# Generation Companies in ERCOT

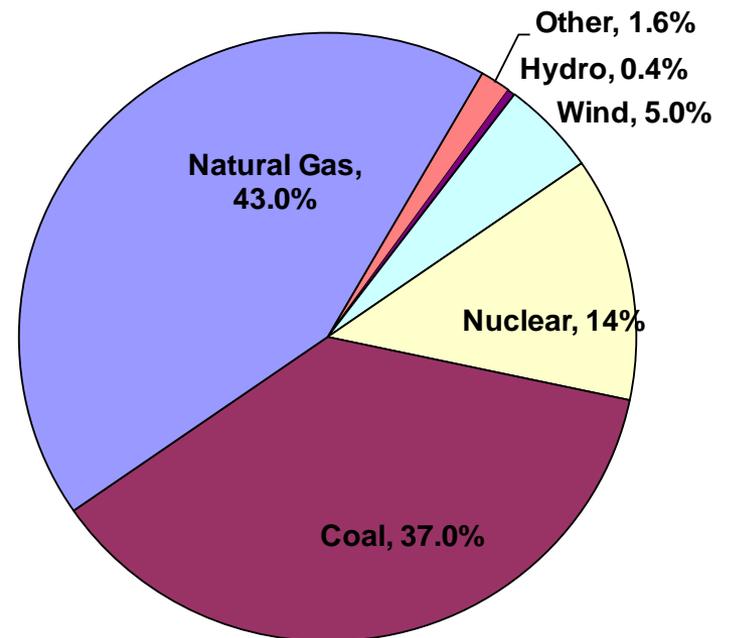
- Generators compete with one another in the wholesale electric market
- **\$36.5 billion** private investment in generation capacity since 1999
- Approximately **95 percent** of energy is sold through bilateral contracts
- The remaining **5 percent** is sold through the balancing energy market and ancillary services, both administered by ERCOT

# Generation Mix in Texas

**2008 ERCOT Generation Capacity  
by Fuel Type**



**2008 ERCOT Electric Generation  
by Fuel Type**



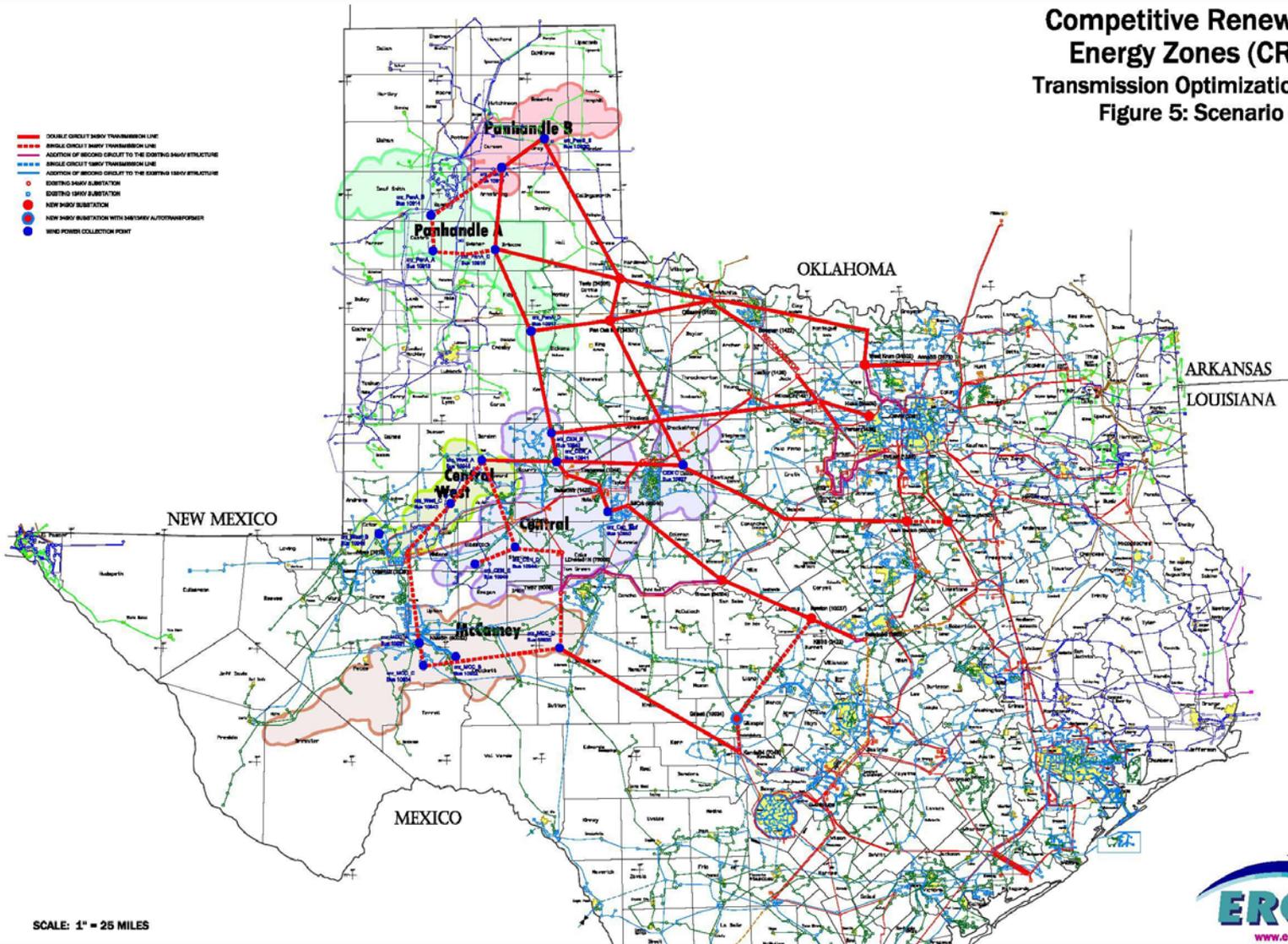
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# TDUs in ERCOT

- Own and operate transmission lines and distribution lines
- Build new lines and maintain existing lines
- Read meters and collect usage information
- Fully regulated monopolies
- Adding approximately **\$5 billion in new transmission** to support Competitive Renewable Energy Zones

# CREZ Map

Competitive Renewable Energy Zones (CREZ)  
Transmission Optimization Study  
Figure 5: Scenario 2



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# Retail Electric Providers in ERCOT

- REPs compete with one another in the competitive retail market
- Procure electricity through bilateral contracts and the balancing energy market
- Interface with end-use customers
- Required to obtain certification from PUCT; also have some reporting and disclosure requirements
- Electric Choice: [www.powertochoose.org](http://www.powertochoose.org)

## Available Offers

**Search Criteria**

Zip Code:

TDU Service Areas:

ONCOR ELECTRIC DELIVERY COMPANY

Rate Type:

Renewable Content:

Price (cents per kWh):  
From: ¢ To: ¢

Contract Term (months):  
From:  To:

REP Company:

Or check boxes to compare offers

Click the column headings to sort offers

	Retail Electric Provider	Avg. Price/kWh (1,000 kWh) ▲	Cost per 1,000 kWh	Rate Type	Renewable Energy Content	Term (Mo.) Cancellation Fee
<input type="checkbox"/>	<b>StarTex Power</b> <i>Star "Secure" 7 month Plan</i> <a href="#">Terms of Service</a>   <a href="#">Facts Label</a> <a href="#">Sign Up</a>   <a href="#">Special Terms</a>	11.8¢	\$118.00	Fixed	0%	7 \$150.00
<input type="checkbox"/>	<b>StarTex Power</b> <i>Secure 6</i> <a href="#">Terms of Service</a>   <a href="#">Facts Label</a> <a href="#">Sign Up</a>   <a href="#">Special Terms</a>	11.8¢	\$118.00	Fixed	0%	6 \$150.00
<input type="checkbox"/>	<b>StarTex Power</b> <i>Promotional Month to Month</i> <a href="#">Terms of Service</a>   <a href="#">Facts Label</a> <a href="#">Sign Up</a>   <a href="#">Special Terms</a>	12.4¢	\$124.00	Variable	0%	1 None
<input type="checkbox"/>	<b>Champion Energy Services</b> <i>One Rate Fixed-6</i> <a href="#">Terms of Service</a>   <a href="#">Facts Label</a> <a href="#">Sign Up</a>   <a href="#">Special Terms</a>	12.4¢	\$124.00	Fixed	2%	6 \$175.00
<input type="checkbox"/>	<b>Spark Energy, L.P.</b> <i>Spark Online Advantage</i> <small>CG&amp;N</small>	12.5¢	\$125.00	Fixed	0%	6 \$125.00

[Print search results](#) [Export offers to XML\\*](#) XML

- Filtering does not apply to the exported XML results.
- To view the file in Excel (2003 or newer), left-click on the **Export Offers** link and save the XML file to your hard disk. Launch Excel and browse to the saved XML file by selecting the **File > Open** menu option in the application. Choose to open file **As an XML List** when prompted.

# Variable Rate Retail Products

Wire Co.	Price	REP	2001 Reg'd Rate	Change
AEPC	9.9	Kinetic	9.6	3.1%
AEPN	9.1	Dynowatt	10.0	-9%
TNMP	9.0	Kinetic	10.6	-15.1%
Centerpoint	9.4	Kinetic	10.4	-9.6%
Oncor	8.8	Kinetic	9.7	-9.3%

*As of 09/08/09*



# 12 Mo. Fixed Rate Retail Products

Wire Co.	Price	REP	2001 Reg'd Rate	Change
AEPC	10.6	Champion	9.6	10.4%
AEPN	9.6	Champion	10.0	-4.0%
TNMP	10.0	Kinetic	10.6	-5.7%
Centerpoint	10.5	Southwest P&L	10.4	0.9%
Oncor	9.6	Champion	9.7	-1.0%



*As of 09/08/09*

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# Renewable Portfolio Standard and Energy Efficiency

- **Current RPS Goals**
  - 5,880 MW by 2015
  - 10,000 MW by 2025
- **Current EE Goals**
  - 20 percent of growth in demand by 2009
  - PUC conducted a study to see if it is feasible to reach 30 percent 2010 and 50 percent by 2015

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# Today's Topics

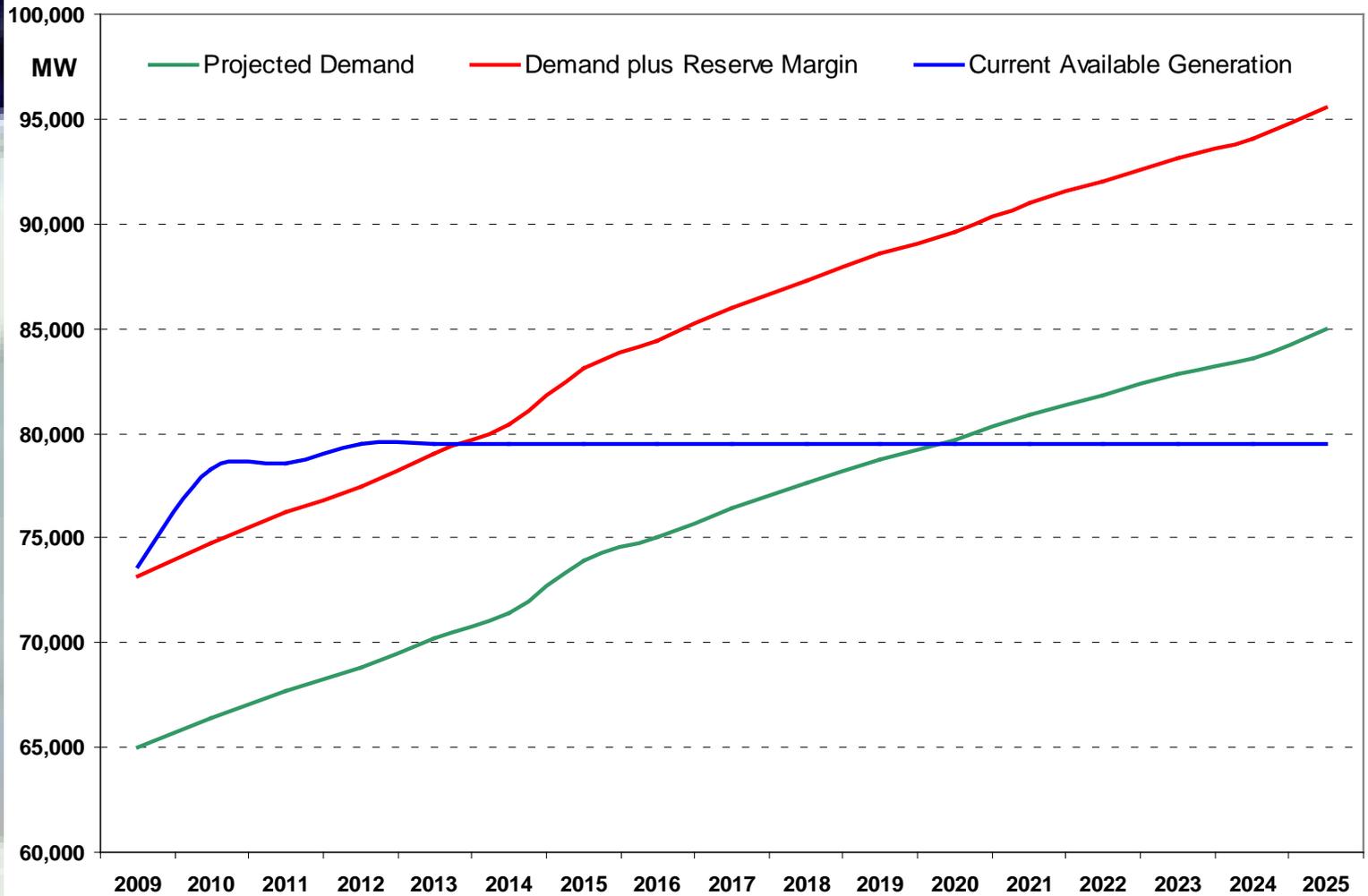
- Texas Deregulated Electricity Market
- *Issues Facing Electric Industry*
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# Issues Facing Texas Electric Market

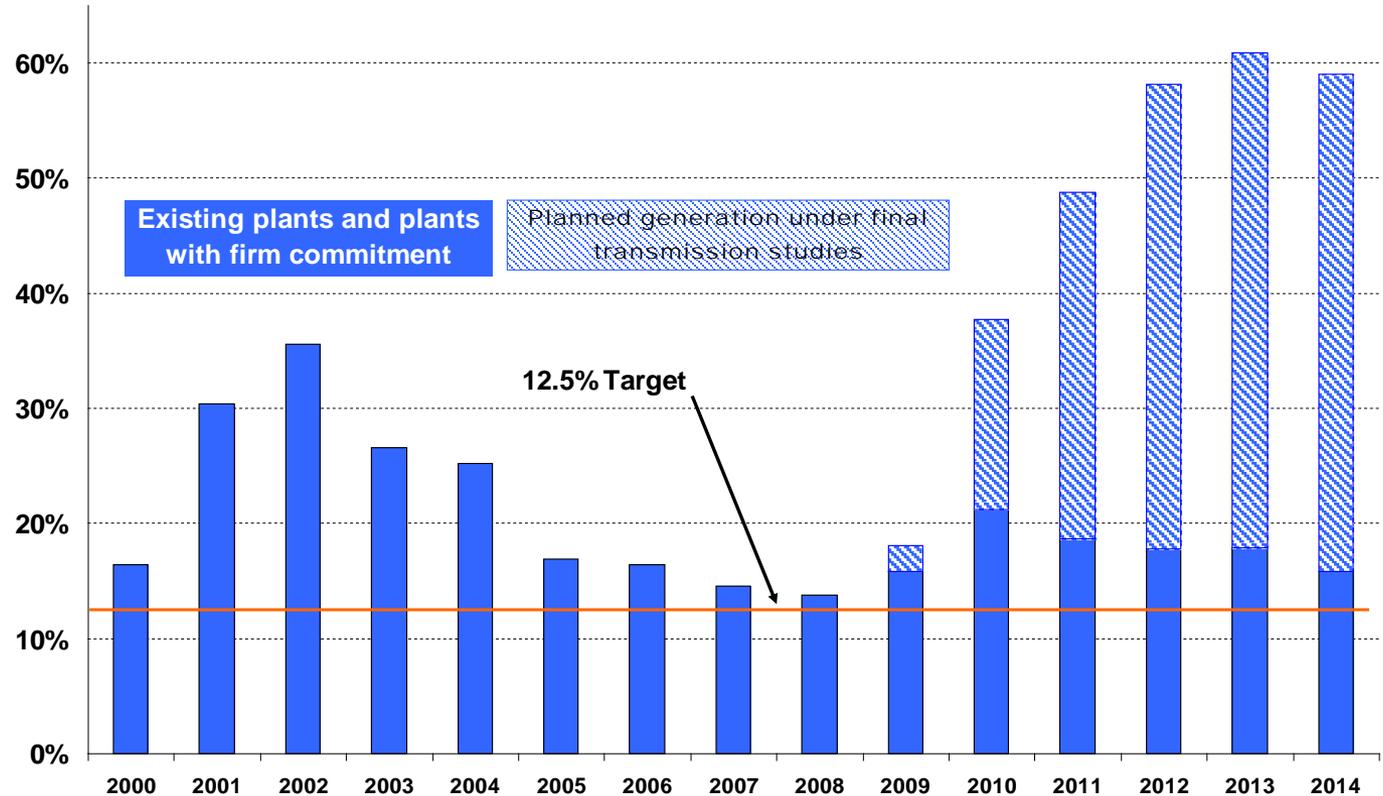
- Growth
- Resource Adequacy
- Fuel Diversity
- Advanced Meter Deployment
- Nodal Implementation
- Wind Integration

# Demand Growth and Available Generation: 2009-2025

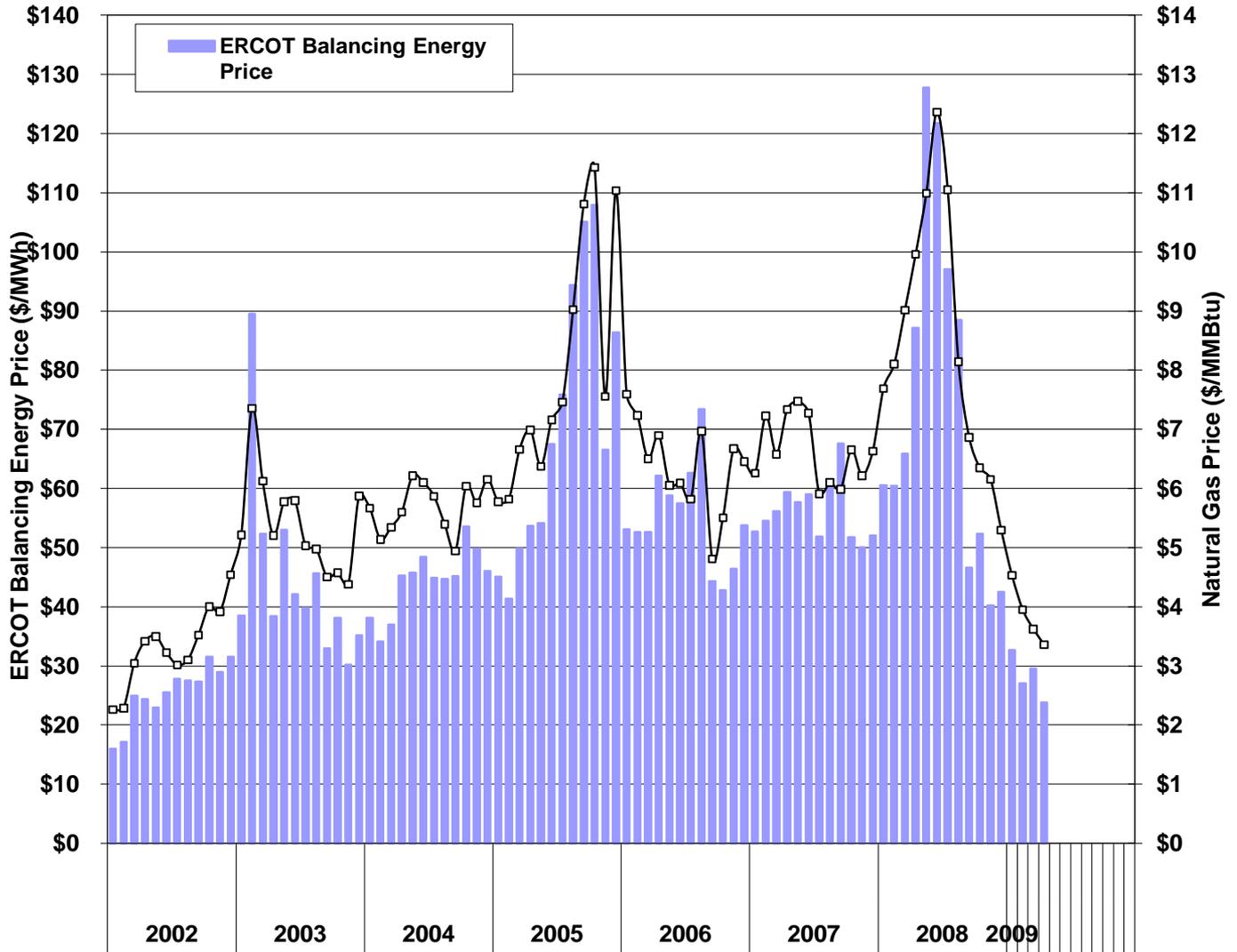


# Resource Adequacy

RESERVE MARGINS 2000 - 2014



# Fuel Diversity



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# Advanced Meter Deployment

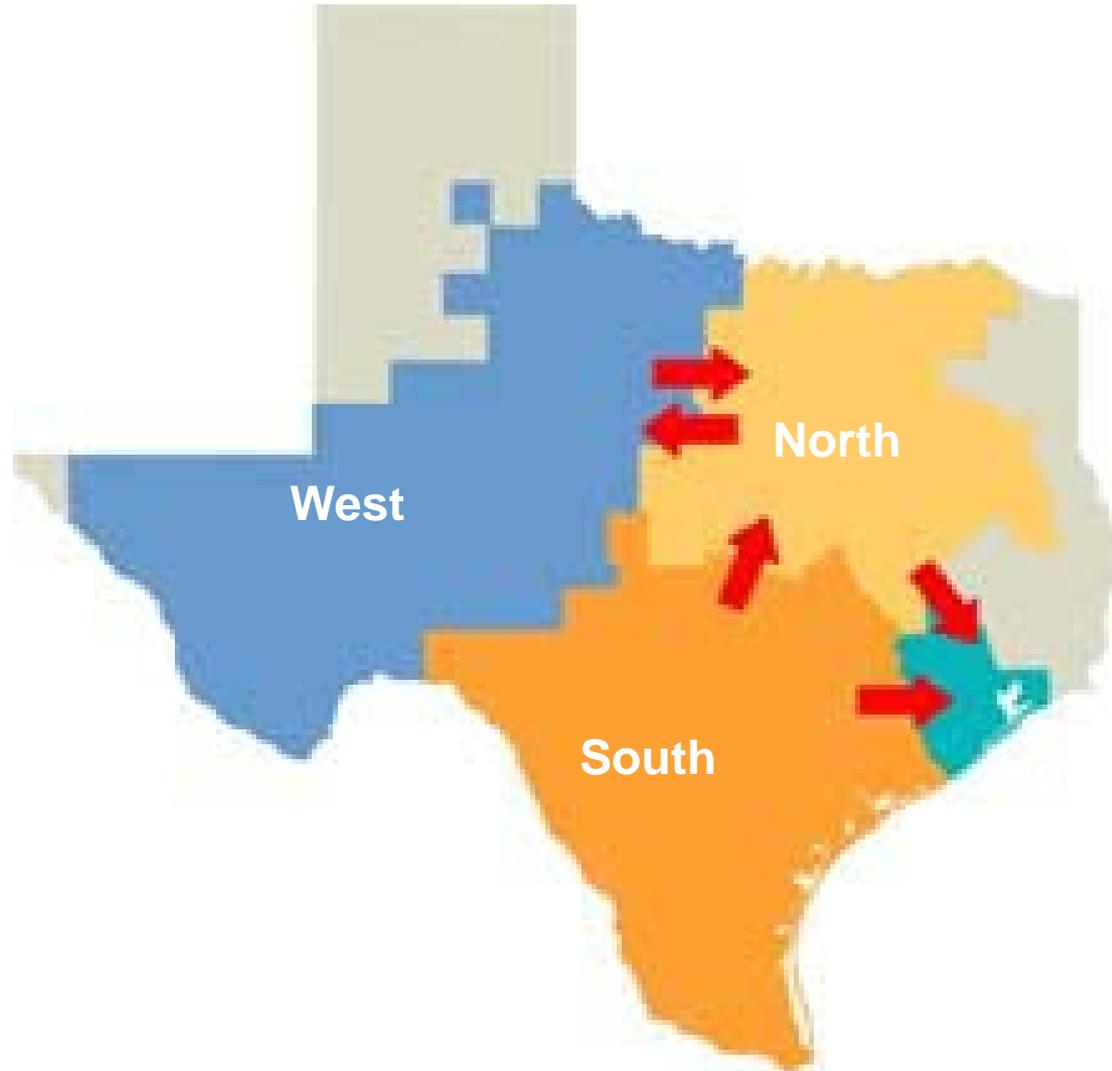
- Since 2005, the Texas Legislature has recognized the potential benefits of advanced metering
- SmartGridNews.com recently ran an article naming Texas as the 2<sup>nd</sup> “smartest” state
- Centerpoint will deploy **2.1 million meters in 5 years**
- Oncor will deploy **3.4 million meters in 4 years**
- AEP just filed their proposal to deploy **1 million meters by 2013**

A vertical graphic of the American flag, showing the blue field with white stars at the top and the red and white stripes below, positioned on the left side of the slide.

# Nodal Implementation

- Transition from zonal to nodal system should result in:
  - Improved price signals
  - Locational Marginal Pricing (LMP)
  - Improved dispatch efficiencies
  - Direct assigned of local congestion
- “Go Live” is expected in December 2010
- Total budget expected to be ~\$660 million
- Cost Benefit Analysis showed \$5.6 billion in benefits to Texas consumers

# Current Zonal Market

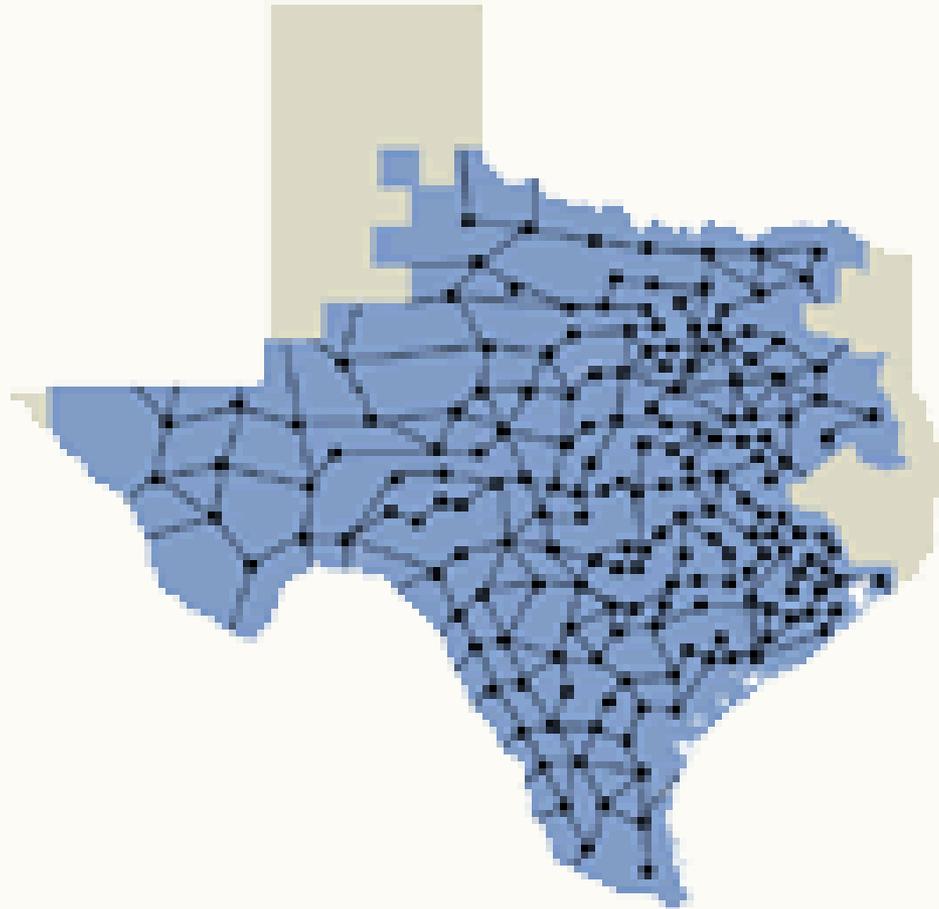


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## What is Nodal?

- A system in which electric grid congestion and pricing information will be captured at more than 5,000 nodes
- This will improve market and operating efficiencies through more granular pricing and scheduling of energy services.

# Nodal Market

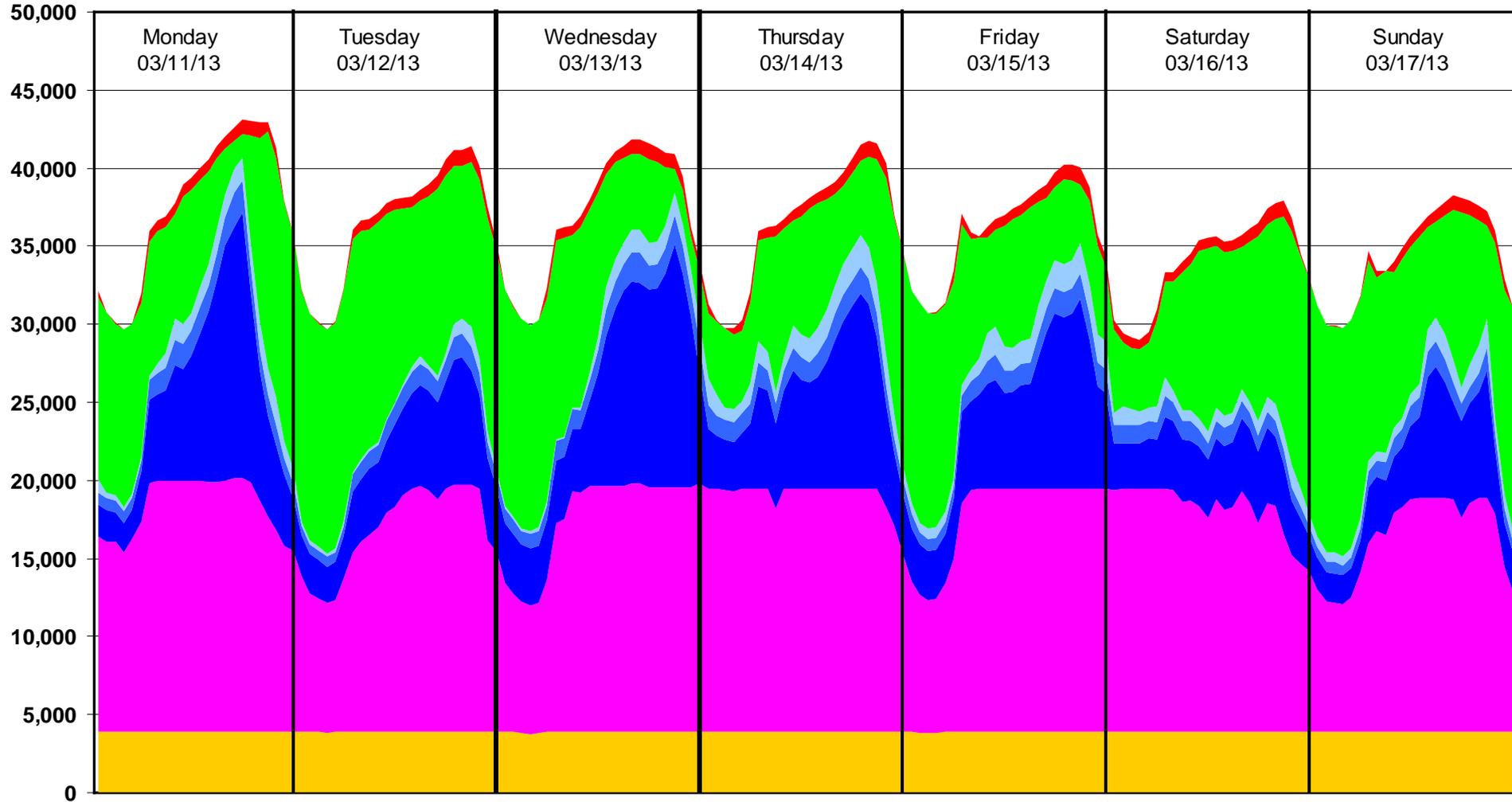






# Wind Integration – High Wind Week

■ Nuke   ■ Coal   ■ Combined Cycle   ■ Gas Steam   ■ Private   ■ Gas Turbine   ■ Wind   ■ Other



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# Today's Topics

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# Economic Conditions

- Global Economic Conditions
- Availability of Credit
- Federal Stimulus Dollars

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## Federal Legislation

- **Carbon Regulation Legislation:**  
Waxman-Markey proposal
- **National Renewable Portfolio Standard:** The Obama campaign promised a national RPS of 10% by 2012 and 25% by 2025
- **Nuclear Energy**

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# Storage Technologies

- Storage technology would revolutionize electric market
  - Potential to address reliability issues
  - Potential to “smooth” intermittency of wind
  - Won’t be feasible until costs are comparable to the most efficient generation



Questions?