



# ERCOT Update

House Committee on Regulated Industries  
Status of the Electric Industry

Feb. 8, 2005

**Electric Reliability Council of Texas**

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# What is ERCOT?

## Electric Reliability Council Of Texas

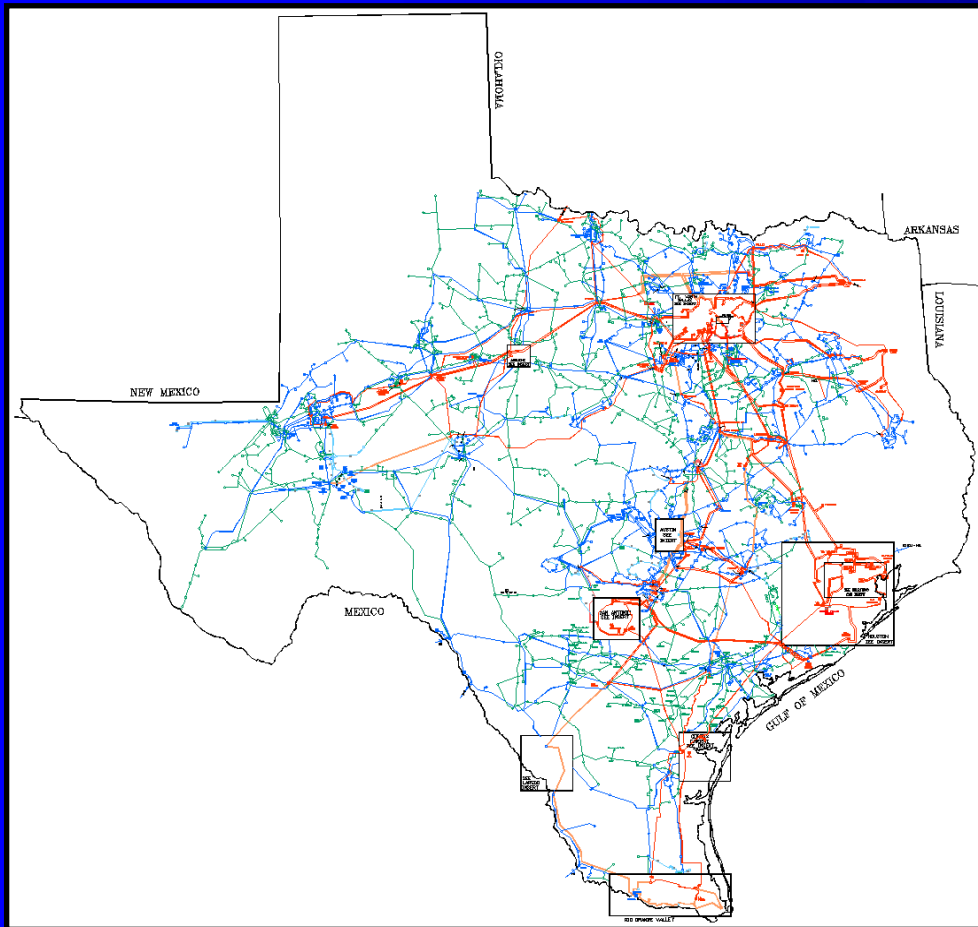
- Intrastate Electric Interconnection
- Public Utility Commission Of Texas (PUCT) jurisdictional
- 70,000 MW of active generation
- 37,800 circuit miles of transmission lines
  - Lower-voltage local distribution lines are the responsibility of the distribution companies, and are not overseen by ERCOT
- 60,095 MW Peak Demand on August 7, 2003
- In existence since 1941
- Independent, not-for-profit organization



# ERCOT's Mission

ERCOT's Mission is to create value for Texas electric consumers through electric grid reliability, market efficiency, and fairness.

# The ERCOT System



- 200,000 square miles of Texas
- 8+ million customers (meters served)
- Over 500 generating units
- 8,100+ circuit miles of 345 kV lines
- 18,200+ circuit miles of 138 kV lines
- 11,500 circuit miles of 69 kV lines



# ERCOT's Role in Reliability

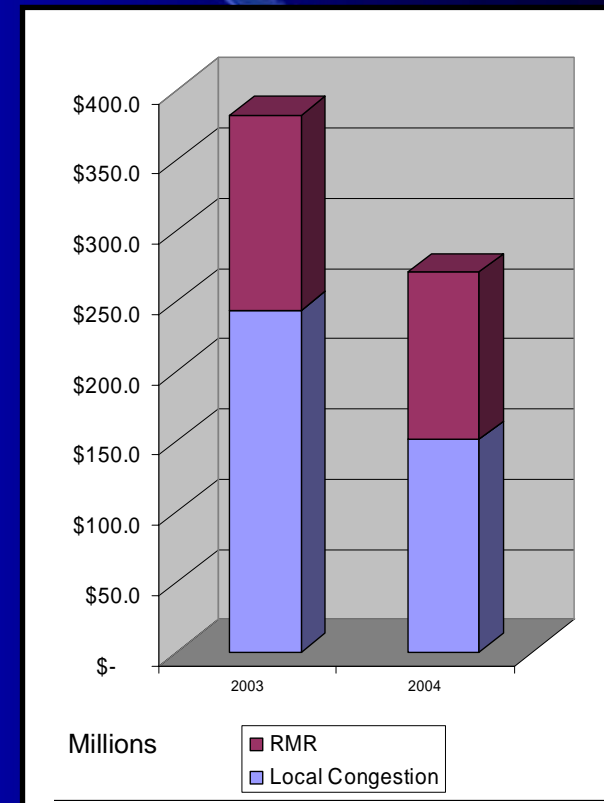
## 'Job One'

- ERCOT “directs traffic” on the grid to maintain reliability
  - Coordinates scheduling of power so generation matches load at all times
  - Analyzes grid conditions continuously in real-time
  - Solves transmission congestion problems
  - Ensures adequate operating reserves are available
- Coordinates emergency recovery
- Ensures compliance with NERC standards

# Congestion Management

Congestion Management is a key component of ERCOT's role in grid reliability and the wholesale market

- Excluding RMR, local congestion cost uplift was reduced by \$117 million (43%) from 2003-2004
  - Dynamic ratings for line limits
  - Transmission system additions & upgrades
  - Congestion analysis



# Texas Retail Market

## Migration from Affiliated Retailer

	% of Load	% of Customers	
	<u>Nov. '04</u>	<u>Nov. '04</u>	<u>Nov. '03</u>
Residential	22%	19%	13%
Small Non-Residential	60%	23%	16%
Large Non-Residential	67%	63%	54%

A total of 1.27 million customers in competitive choice areas are now receiving power from non-incumbent providers



# Retail Market

## How Does Texas Stand?

- Retail market ranked #1 in North America by Center for the Advancement of Energy Markets (CAEM)
  - More retail adoption than any other N. Am. market
- All parties (ERCOT, TDSPs, REPs) must function well for system to work
- ERCOT's unique role as neutral registration agent has been cited as a major reason for success of this market
- Major upgrade of retail transaction system implemented on schedule in 8/04 -- automates the move-in/move-out process
- Transaction timeliness & accuracy rates of 98-99%



# ERCOT's Role in Addressing Market Issues

- ERCOT is an independent source of facts and expertise for policymakers and stakeholders
- Stakeholder process assures changes will work
- Current issues:
  - Reserve margins
  - Fuel diversity
  - Transmission planning
  - Wind power
  - Grid security
  - Wholesale market design

# Reserve Margins

- No immediate crisis – 2005 reserve margin is 15-17%
- Recent mothball and decommissioning actions show that market forces are working
  - Older, less efficient plants are less competitive
- TAC Task Force developing better process for reporting status of mothballed units
  - Which will likely come back online?
- ERCOT will actively participate in PUC resource adequacy proceedings

# Fuel Diversity

Electric generation fuel sources in ERCOT

TAC subcommittee is currently assessing vulnerability of electric supply to natural gas curtailments

<i><b>Fuel Source</b></i>	<i><b>% Capacity</b></i> <i>(Dec. '04)</i>	<i><b>% Energy</b></i> <i>(Jan.-Nov. '04)</i>
Natural Gas	63%	38%
Dual Fuel*	10%	
Coal	19%	42%
Nuclear	6%	18%
Renewables	2%	2%

*\* Natural Gas or Diesel Fuel; all plants currently configured for gas*

# Transmission Planning

- Nearly \$2 billion has been invested in ERCOT transmission facilities since 1999, including:
  - 900 miles of new transmission line construction
  - Numerous substation additions & improvements
- An additional \$1.8 billion will be invested by 2008 based on current projections
  - Includes >500 miles of new transmission lines already being permitting or under construction
- Transmission system expansion faces competing priorities:
  - West Texas (wind power)
  - North Texas (DFW area responsible for ~50% of local congestion costs in ERCOT)
  - Rio Grande Valley
- Providers & regulators must evaluate costs & benefits

# Wind Power



- 1,300 MW of wind capacity is now online in West Texas (1200 MW since SB7)
- 550 MW more to go online in 2005

- Texas is well on its way to meeting renewable mandate from SB7 (2,000 MW by 2009)
- West Texas is a premium site for wind energy due to geography & weather patterns
- Power from existing wind farms must be delivered hundreds of miles to population centers in the east, and is not as controllable or predictable as traditional sources
  - Creates new challenges in system design & operation
- Identified upgrades to transmission system could accommodate existing mandate, but not a significant increase above 2,000 MW from West Texas

# Grid Security

- Transmission system has continuous real-time telemetry to ERCOT
- Fully redundant and staffed backup control center
- Standing Emergency Operation Procedures
  - Includes Emergency Electric Curtailment Plan for extreme contingencies
  - Black Start
- Full compliance with NERC security standards
- Working with PUC to enhance and improve communication procedures



# Wholesale Market Design

- Texas Nodal Team (TNT) stakeholders working toward consensus on details of new market design as required by PUC rule (9/03)
- Cost-Benefit study filed with PUC in December
- Draft protocols to be filed with PUC March 18 for review
- ERCOT will be ready to develop and implement any new market design approved by PUC



# Management Practices & Controls

Numerous actions taken immediately, including...

- HR & Contracting
  - Mandatory competitive bidding
  - Mandatory criminal background checks
  - Stronger ethics agreement
- Finance & Accounting
  - Tightened approval and control practices
  - Added requirement for financial terms of contracts on PO's
  - Secondary review of invoices
- General
  - Implemented budget reductions and reduced Administration Fee
  - New CFO hired (Roy Bowman)
  - Security Action Plan developed and being implemented
  - Mandatory management training on contractor policies
  - Strengthened internal audit program with new staff
  - 3<sup>rd</sup>-party anonymous reporting service to report suspected activity

# Management Action Plan

