



# **Managing Renewables in ERCOT – or What a Perfect Storm?**

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**February 24, 2010**

**North American Synchrophasor Initiative**

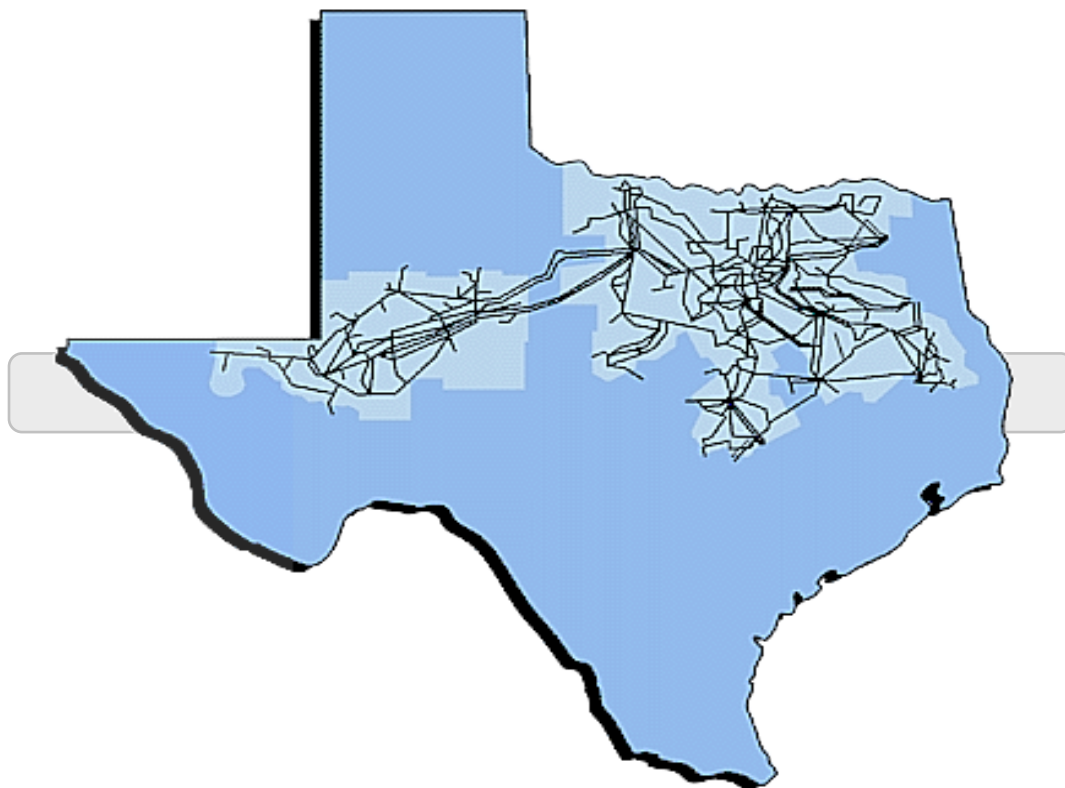
**Oncor Electric Delivery**

# Oncor at a Glance



**Texas' largest regulated transmission and distribution utility - 6<sup>th</sup> largest in the U.S.**

- **No generation; no retail service**
- **Serves approximately 7.5 M people**
- **401 cities and 91 counties**
- **115,000 miles of T&D**

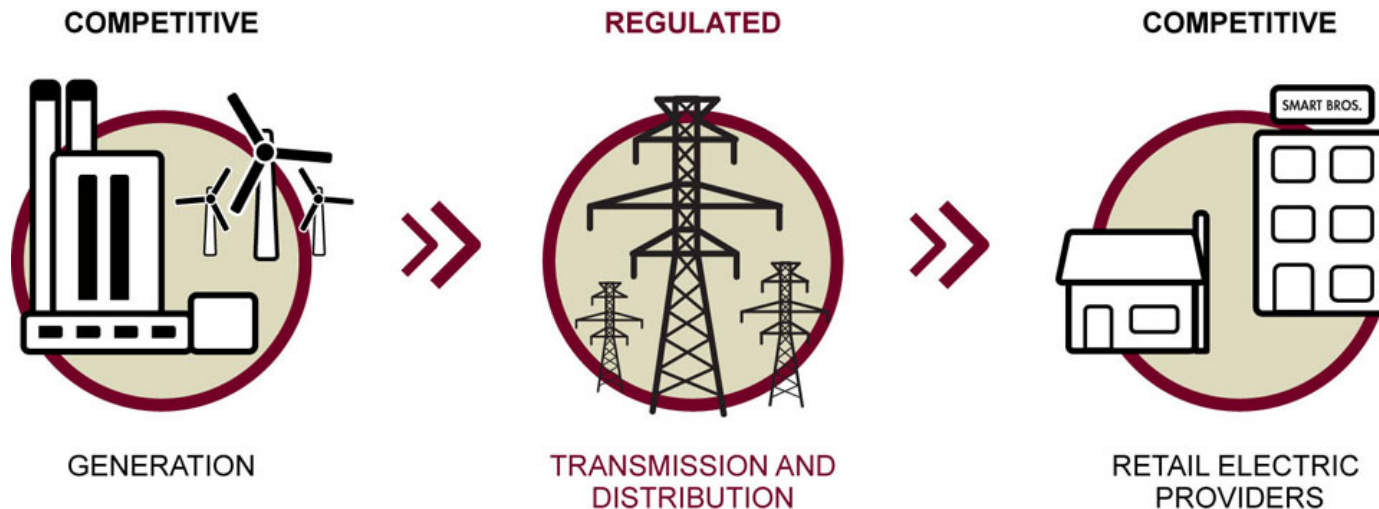


*\* based on amounts paid in 2005-2008*

# ERCOT Market

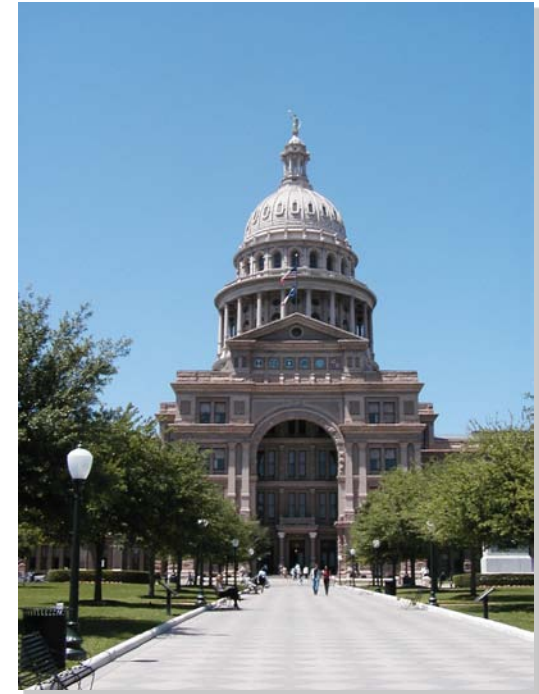


- Competitive market since 2002
- T&D Delivery Regulated
- 100+ Retailers Active in Market
- Peak demand of 65,000 MW
- Renewable Portfolio Standard goals set in 2003; 9,000 MW of wind power currently online



# What was in the water in 2005?

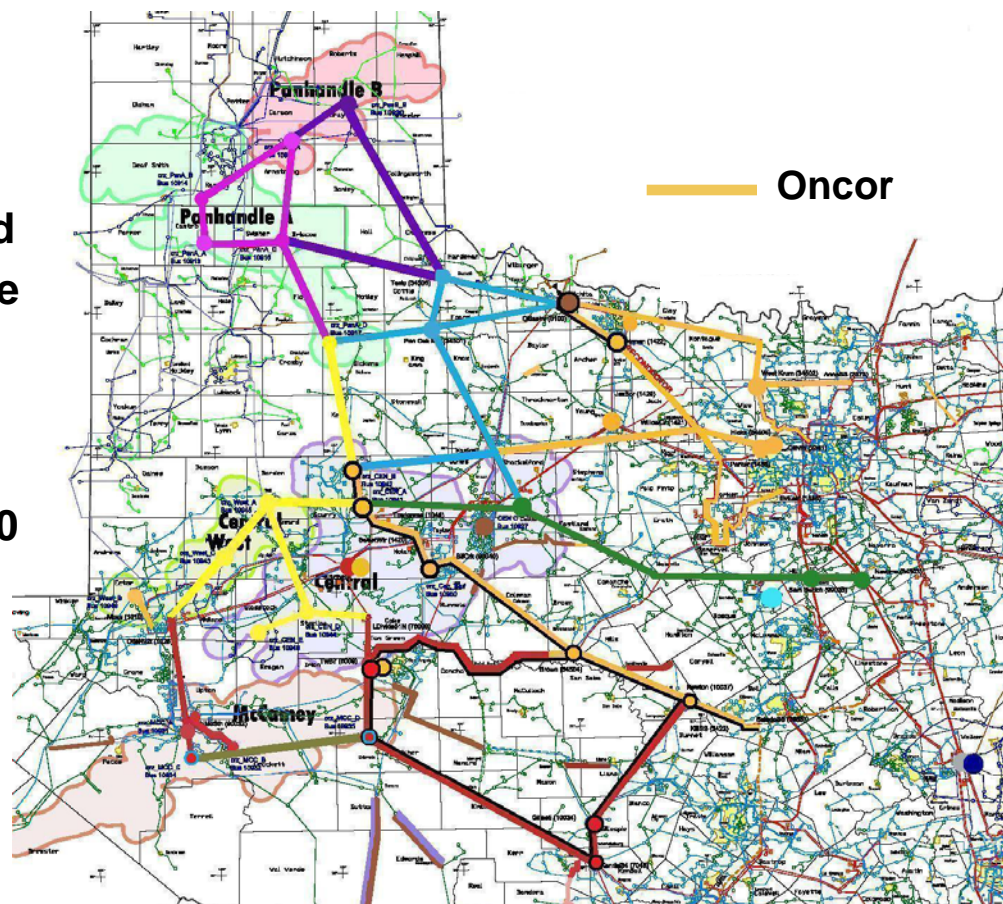
- In 2005, the Texas Legislature approved legislation directing the PUCT to establish a process to concurrently identify wind rich areas and the development of transmission to serve those areas
- “Competitive Renewable Energy Zones” or CREZ was born
- Also in 2005, the Legislature passed legislation encouraging the installation of Advanced Metering Systems (“AMS”) and authorizing the PUCT to establish a cost recovery mechanism



# CREZ Update



- The PUCT and ERCOT identified wind rich zones primarily in the West and Panhandle areas of Texas
- ERCOT led the development of transmission plans to integrate wind production facilities, up to 24 GW
- The PUCT selected a 18 GW plan, and selected eight companies to build more than 2,200 miles of new transmission lines
- Oncor's portion entails more than 800 miles of these new lines
- Project will more than double Texas' current wind capacity



\* represents areas of shared projects



# Advanced Metering is Underway



- The PUCT developed rules specifying AMS functionality and established a surcharge for utilities to recover reasonable and necessary costs
- Oncor received approval to deploy 3.4 million advanced meters by the end of 2012
- 15-minute interval usage data
- Home Area Network (HAN) capability
- Remote connect/disconnect capability
- Common web portal
- Dedicated consumer education programs



# Advanced Grid Technology will be required to manage large amounts of Renewable Generation



- **FACTS and similar devices will play a prominent role**
- **Devices such as SVCs use advanced electronics and high speed controls to switch capacitors and reactors in response to system conditions**
- **Oncor's first unit in operation June 2009 - largest and fastest SVC in operation in the world**
- **Second unit will be in service in 2010**



**Oncor Parkdale SVC Installation**

# ERCOT uniquely positioned to tie all the pieces together...



**18,000 MW of wind power capacity by the end of 2013**



**7+ million smart meters 2013**



**CREZ Build Out**



**40 million cars in DFW, San Antonio, Houston and Austin areas**





[www.oncor.com](http://www.oncor.com)