

Texas Public Power Association
2008 Annual Meeting

CREZ

Are We There Yet?



Presented by: Heather Bailey and John Moore
July 22, 2008

CREZ – Competitive Renewable Energy Zone

In order answer the question “CREZ – Are We There Yet?”, we need to define where “There” is.

So far, it’s been a 3-year journey.



Table of contents

1. How the journey began
2. The route it took
3. Stops along the way
4. Are we there yet?

How the journey began

Growth in supply and demand for electricity is exceeding state's ability to deliver power to the grid

- » Deregulated wholesale market drove the development of new generation
- » Demand for electricity could increase by 50% by 2030
- » Competitive Renewable Energy Zones (CREZ) were created to incent new wind generation
- » Wind generation can be planned and built in 12-18 months; transmission takes much longer, with financial implications for generator
- » Transmission investment in the Electric Reliability Council of Texas (ERCOT) could exceed \$6 billion over the next 5 years



How the journey began

In 2005

- » The Legislature's established a renewable energy goal of:
 - 5,880 MW by January 1, 2015
 - 10,000 MW by January 1, 2025
- » The Public Utility Commission of Texas (PUCT) directed to develop transmission to deliver renewable energy in the most cost effective and beneficial manner.



How the journey began

CREZ actions as defined by SB 20

Senate Bill 20

- » Designate CREZs
- » Develop transmission plan to serve CREZs
- » Level of renewable generation financial commitment
- » Exclude the “need” requirement for PUCT CCN reviews
- » Biannual reporting to Legislature
 - Status of implementation
 - Cost
 - Impact on reliability
 - Additional generation and transmission needs
- » Adopt rules to improve renewable generation performance/reliability
- » Complete review of CCN application within 180 days

The route it took...

Three years later - 1,400 documents with 10's of thousands of pages filed

- » Rules implemented by PUCT to support SB20 and TSP selection process
- » ERCOT stakeholder input sessions
- » Studies
 - Identifying wind zones
 - Evaluating transmission scenarios
 - Studying reliability of varying levels of wind resources
- » Filings
 - Expressing interest in building CREZ
 - Asking to be a designated CREZ
 - Providing comments on ERCOT studies
 - Advocating CREZ scenarios
- » The PUCT Commissioners and Staff listened and opined on a compendium of complex issues



Stops along the way...

- » December 2006
 - PUCT adopted substantive rule to support SB20 renewable energy goals
 - Established Docket 33672, Petition for Designation of CREZ
 - ERCOT study of wind energy potential and transmission limitations^[1]
- » July 2007
 - Docket 34560 Selection of Transmission providers rulemaking proceeding initiated
 - Project 34577 to establish policy relating to excess development in a CREZ (priority dispatch)
- » October 2007
 - ERCOT files draft Ancillary Services Study on impact of wind
- » November 2007
 - Docket 33672 Interim Order designating CREZ zones
 - ERCOT ordered to develop transmission scenarios
- » March 2008
 - Docket 35424 established to encourage settlement process of selecting TSPs to build CREZ

1. "Reports to the Legislature on Renewable Energy and the need for Generation and Transmission Facilities"

Stops along the way... *(cont'd)*

- » April 2008
 - ERCOT files CREZ Transmission Optimization Study and final Ancillary Services Study
- » June 2008
 - Docket 34560 - order approving rule for selection of TSPs to build CREZ
 - PUCT Commissioners hear CREZ case (Docket 33672)
- » July 17, 2008
 - PUCT Commissioners recommend Scenario 2 for CREZ transmission
- » August – December – Selection of TSP's to build CREZ

Stops along the way...

Designated zones and scenario wind levels

In Oct. 2007, the PUCT issued an Interim Order which designated 5 areas as CREZ and requested that ERCOT develop transmission plans for 4 levels of wind capacity.

Capacity of New CREZ Wind by Scenario (MW)				
Wind Zone	Scen. 1	Scen. 2	Scen. 3	Scen. 4
Panhandle A	1,422	3,191	4,960	6,660
Panhandle B	1,067	2,393	3,720	0
McCamey	829	1,859	2,890	3,190
Central	1,358	3,047	4,735	5,615
Central West	474	1,063	1,651	2,051
Total*	12,053	18,456	24,859	24,419

*** Assumes 6,903 MW of existing wind capacity**

From Warren Lasher's 7-21-08 TPPA Presentation

Stops along the way...

CREZ study results

CREZ Plans		
Scenario	Cost (\$B)	Miles of New ROW
Scen. 1A	2.95	1,638
Scen. 1B	3.78	1,831
Scen. 2	4.93	2,376
Scen. 3	6.38	3,036
Scen. 4	5.75	2,489

ERCOT Report is available at:

http://uatwww.ercot.com/content/news/presentations/2008/ERCOT_Website_Posting.zip

Stops along the way...

PUC requirements to qualify as a TSP for the CREZ

(this applies to non-incumbents)

- » Explanation of current and expected capabilities for:
 - Financing – proposed financial plan showing adequate capital
 - Construction
 - Operations
 - Maintenance
- » Describe the resources to be used in each category
- » Must show how this will be done in a beneficial and cost-effective manner
- » Budgeted capital and O&M
- » Proposed schedule
- » Use of HUBS
- » Listing of any regulatory, state, or federal law violations
- » Other evidence to help support filing

Stops along the way...

Scenario 2 recommended - \$4.9 bill, 18,456 MW

- » Commissioners Smitherman and Hudson support Scenario 2
 - Consideration of city owned utilities' positions
 - Concern price tag is too high
 - Strong support by wind developers and West Texas supporters for Scenarios 3 and 4
 - Lack of data and technical analysis (ancillary services study, fuel savings, and reliability) for Scenarios 3 and 4
 - Scenario 1B, while reasonable, would not support further wind expansion (will be close to 10,000 MW at the end of the year and 1B supports up to 12,000 MW)
 - Scenario 2 is more cost effective on an incremental per MW of wind basis than Scenario 1B
- » Commissioner Parsley dissenting
 - Does not support inclusion of Panhandle interconnect
 - Concerns about reliability and wants provisions for staging and check points in the development of CREZ transmission

Stops along the way...

Scenario 2 recommended

- » Smitherman and Hudson directed order to reflect:
 - Prioritization of 3 CREZ lines to alleviate immediate problems
 - They are to come forward either as CREZ or through ERCOT RPG process, whichever is quickest
 - Prohibition on backing down nuclear units for wind
 - Smitherman would like to see same prohibition for clean coal
 - Accelerate current work on reliability for Scenario 2; perhaps establish a task force to review issue

Are We There Yet?

- » According to ERCOT June 2008 System Planning Report
 - Installed wind generation capacity is 5,519 MW
 - Expected installed capacity to exceed 9000 MW by end of 2008
 - Wind generation interconnection requests total 53,804 MW
 - Texas surpassed California and leads the nation in wind generation



Are we there yet?

What this means to you

- » Scenario 2 will cost an average of \$4.04 a month on residential customers' electric bill ^[1]
- » Increased access to clean, renewable energy for your customers
- » Reduced transmission congestion for both Dallas and Houston areas
- » Economic stimulus to areas in West Texas where wind and other generation development will now occur



1. FPL Energy witness Peveto's testimony.

Are we there yet?
Almost!

Completed

Senate Bill 20 CREZ Actions

- » Established substantive rule consistent with SB20
- » Designated CREZs
- » Established rule for selection criteria for TSPs to build CREZ

Very Close

To Completing
(August 14, 2008)

- » Selected transmission routes and levels of financial commitment to support CREZ

Remaining

Activities to be Completed

- » Selecting TSPs to build CREZ
- » ERCOT detailed planning to determine impact on grid and ancillary services
- » Complete review of CREZ line CCNs within 180 days of filing
- » Finalizing CREZ priority dispatch rule
- » Getting CREZ transmission built!

Are We There Yet?

- » Almost
- » Lots of progress
- » We'll know in 2013
- » Questions?



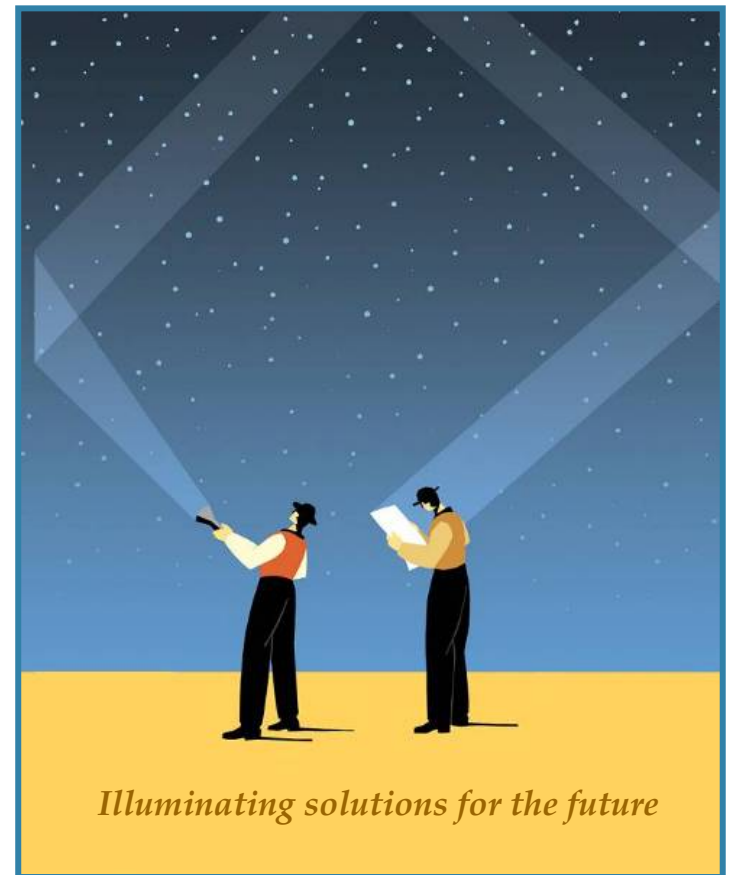
Contact information



Heather Bailey | Director
hbailey@navigantconsulting.com
512.493.5414 direct



John Moore | Director
jmoore@navigantconsulting.com
512.493.5440 direct



Appendix

Summary of ERCOT CREZ optimization and Ancillary Services studies

- » With 15,000 MW of installed wind capacity in ERCOT, the operational issues posed by wind generation will become a significant focus in ERCOT system operations. However, the impacts can be addressed by existing technology and operations, without requiring any radical alteration.
- » ERCOT's regulation procurement methodology can be improved by including wind forecast information and wind capacity growth.
- » Inclusion of wind forecasting in operations planning is critical.
- » ERCOT's unit commitment may need to be altered to provide ancillary services.
- » Variation of wind tends to be anti-correlated, or out of phase, with the daily load curve, but the errors in load and wind forecast are virtually independent. That means that it is improbable for the most severe load and wind forecast errors to occur in the same hour.
- » Additional regulation will be required in relatively small amounts (54 MW up and 48 MW down).
- » Certain improvements to the regulation procurement methodology are recommended.
- » Energy production from wind tends to be offset primarily by reduction in production from combined-cycle natural gas plants.
- » The cost of the additional ancillary services identified in the report will be small relative to the cost savings from the additional wind generation.