

Competitive Renewable Energy Zones in Texas



**National Governors
Association Center for
Best Practices
Clean Energy States
Grant Program
Workshop**

Dr. David Hurlbut

November 18, 2008

Presentation objectives

- Clarify what the CREZ process is – and isn't
- Describe historical development
- Describe legal aspects of a CREZ
- Identify factors affecting applicability of the Texas model to other states

Renewable energy in Texas

- Renewable portfolio standard began in 2002 as part of competitive restructuring
- Aggressive wind power growth since 2001
- Serious wind power transmission issues arose in 2002 after the first wave of wind power development in West Texas
- Conventional transmission planning failed to resolve wind power issues
- Texas Legislature created new transmission regime for wind power in 2005

Competitive Renewable Energy Zones

- Statutory presumption of need
 - Establishes legal exceptions to laws governing transmission approval and cost recovery
- Gives Public Utility Commission of Texas (PUCT) unambiguous authority to approve transmission on the informed expectation of future renewable energy development

What it isn't

- Not a resource assessment
 - Don't need a statute to do that
- Not resource-neutral
 - CREZ process favors technologies best able to attract capital
 - First-round CREZs were based on wind, because that's where capital was going; re-directing capital to other technologies was not a CREZ goal
 - However, Texas' best concentrating solar potential coincides with wind-rich areas in West Texas
- Not magic
 - If approached as nothing more than a resource assessment, no assurance that anything will actually happen

The initial problem

- First wave of wind power development was in the McCamey area of West Texas
 - By 2002, McCamey had 760 MW of installed wind power
 - Local grid was built to serve a small load; only 400 MW of total transmission capability
- Operator-ordered curtailments degraded wind's effective annual capacity factor from around 40% (estimated) to 27%

Failure of conventional planning

- ERCOT (independent system operator for most of Texas) identified three transmission alternatives
 - Total transmission capability ranged from 1,000 MW to 2,000 MW
 - New interconnection agreements (IAs) would determine which alternative would proceed, consistent with state utility code and case law precedent
- Wind developers signed no further IAs in McCamey, so nothing went forward

Legal bottleneck

- Transmission utility had to show PUCT that the line would be used and useful
 - By precedent, demonstration was a financial commitment from the generator that would connect to the new line
 - Commitment was a surety bond posted by the developer in an amount equal to the expected cost of the transmission upgrade, forfeited to the utility if the developer cancelled
- Classic “chicken-or-egg” problem
 - No new wind projects without commitment that transmission would exist
 - No new transmission without commitment that wind projects would exist

In short,

- Developable renewable resources and transmission options were known, but for three years nothing happened
- Obstacle was the transmission utilities' inability to demonstrate need in a way that satisfied statutory requirements

Origin of the CREZ concept

- PUCT workshop in 2002 proposed CREZ concept as a possible solution to the McCamey problem
 - Identify areas where the economics would be compelling to a typical competitive wind developer
 - Build transmission in advance of full commitments from specific wind power projects
 - Let the competitive market decide who would actually get to build the wind power
- CREZ concept was shelved because it required statutory authority PUCT didn't have at the time
- Legislature gave PUCT statutory authority in 2005

Statutory trail: Designating CREZs

- The PUCT shall consult with ERCOT and other appropriate transmission operators, then:
 - “designate competitive renewable energy zones throughout this state...”;
 - “develop a plan to construct transmission...”; and
 - “consider the level of financial commitment by generators for each [CREZ] in determining whether to designate an area as a [CREZ]”

Tex. Util. Code §39.904(g)

Statutory trail: Route approval

- “In considering an application for a certificate of public convenience and necessity for a transmission project intended to serve a [CREZ], the commission is not required to consider the factors provided by Sections 37.056(c)(1) and (2).”

Tex. Util Code §39.904(h)

- Factors not considered for a CREZ:
 - “(1) the adequacy of existing service”
 - “(2) the need for additional service”

Tex. Util Code §37.056(c)

Statutory trail: Cost recovery

- “If the commission issues a certificate of convenience and necessity ... to facilitate meeting the goal for generating capacity from renewable energy technologies ..., the commission shall find that the facilities are used and useful to the utility in providing service ... and are prudent and includable in the rate base, regardless of the extent of the utility's actual use of the facilities.”

Tex. Util. Code § 36.053 (d)

Statutory trail in short

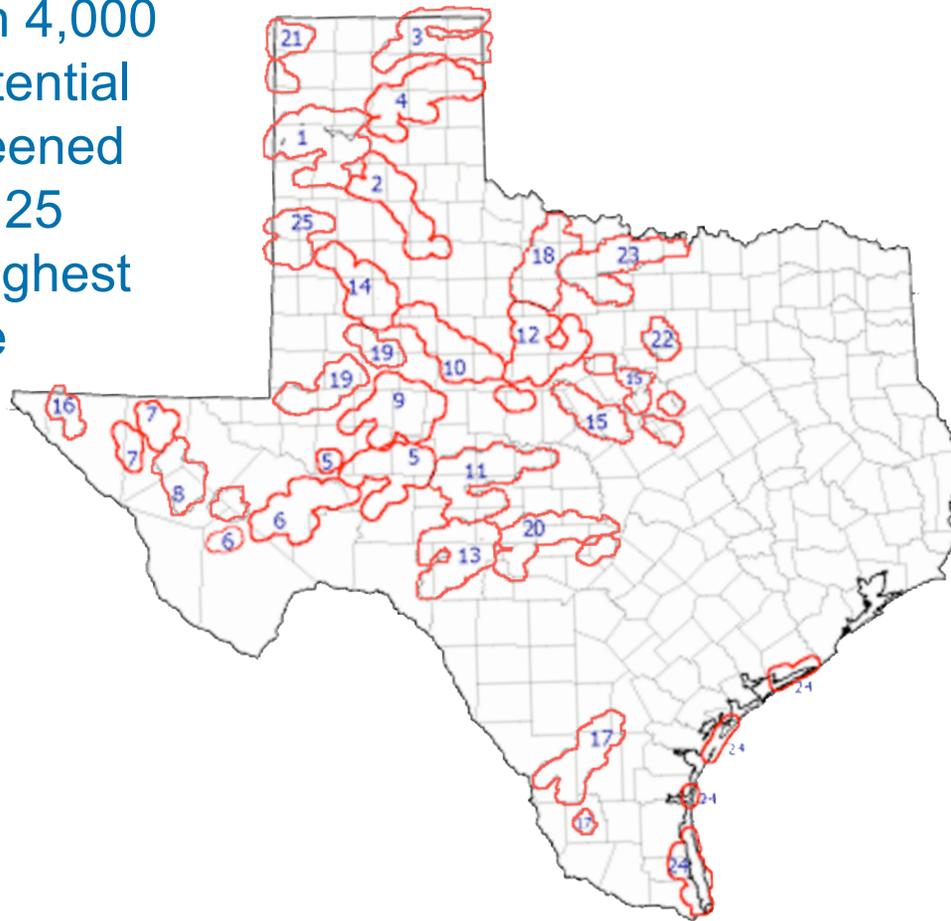
- After getting technical advice, PUCT (not the utility) legally designates CREZs and a plan for transmission
 - Where, how big
 - High-level transmission needs (size, but not specific route)
- CREZ designation settles question of need
- CREZ designation guarantees cost recovery
- Need and cost recovery are the *sine qua non* elements of the Texas CREZ model
 - Need and cost recovery are tough issues to solve legally
 - That's why the CREZ concept was invented

Implementing CREZs

- ERCOT conducted initial 12-month study
 - Open, informal stakeholder process
 - Active participants included all wind developers, Texas Department of Wildlife, transmission utilities, some West Texas cities, PUCT staff
 - Mesoscale analysis of wind potential by AWS Truewind
 - Production cost modeling to compare costs and benefits of various CREZ scenarios
 - Report delivered to PUCT Dec. 1, 2006

Study zones identified by ERCOT

Areas with 4,000 MW of potential each, screened to identify 25 with the highest productive potential



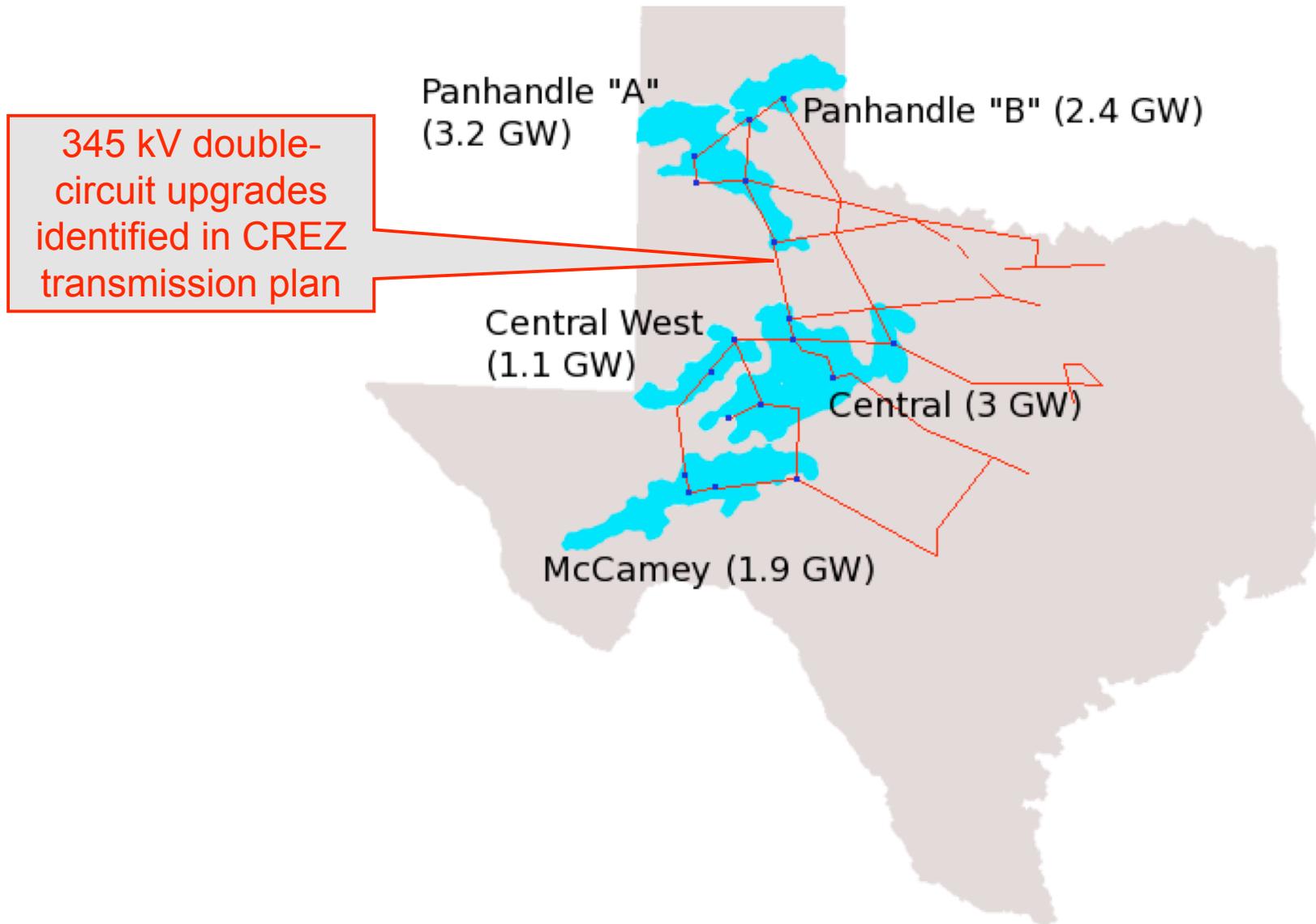
Litigated issues for a potential CREZ

- Whether renewable energy resources and suitable land areas were sufficient to develop generating capacity from renewable energy technologies
- The level of financial commitment by generators
- Any other factors considered appropriate by the commission as provided by law

Financial commitment

- Existing development
- Signed interconnection agreements
- Leasing agreements
- Letters of credit posted with ERCOT
- Other (accepted and weighed at commission's discretion)

CREZs approved by PUCT in 2008



Going beyond Texas

- Differences that matter (and made it easier in Texas)
 - ERCOT is a single power control and transmission planning area
 - ERCOT has a single transmission cost allocation methodology
- Differences that don't matter as much as one might think
 - Restructured electricity market
 - CREZ was designed to fit a competitive wholesale market
 - Approach can be modified for a cost-of-service regulatory regime
 - Lack of FERC jurisdiction in ERCOT
 - FERC's preference is to defer to regional initiatives for transmission cost allocation if all states agree to the methodology

Key elements

- Designating a zone has ramifications under law
 - Imputes a public interest value that distinguishes areas in a zone from areas not in a zone
 - Imputed public interest value is substantial enough that it compels transmission planning for renewable energy development
- Transmission planning and approval can proceed without knowing which specific projects will be connected
- Economic analysis reasonably supports the informed expectation that capital invested in renewable energy projects in the zone will be profitable