

Public Utility Commission of Texas

Memorandum

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FILING CLEAR

TO: Commissioner Kenneth W. Anderson, Jr.
Commissioner Brandy D. Marty
Chairman Donna L. Nelson

FROM: DATE: May 29, 2014

RE: **Open Meeting Agenda Item 29; Project No. 42079;** Discussion and possible action on electric reliability; electric market development; ERCOT oversight; transmission planning, construction, and cost recovery in areas outside of ERCOT; SPP Regional State Committee and electric reliability standards and organizations arising under federal law.

As discussed at the April 17th open meeting, I would like to open a project to look at ERCOT's prospective system upgrades, ancillary services, and the transmission planning process related to renewable resources, as well as problems that have arisen as part of the CREZ build-out. The unique characteristics and often-remote locations of renewable resources pose challenges to the electric grid, and those challenges are increased as the volume of wind on the system increases. For example, some of the series compensated transmission lines that are part of the CREZ build-out can cause sub-synchronous oscillation issues that must be resolved in order to avoid damage to the transmission grid and generation resources. The Panhandle region is currently experiencing so much interest from wind developers that there is a concern that the overall system strength will be negatively affected unless the infrastructure is updated.

The Federal Production Tax Credit was started in 1992 in order to spur a developing technology and allow it to gain the momentum necessary to make it commercially viable. Now, 22 years later, there can be no doubt that renewable technology—especially wind and solar—are mature industries. Every year when Congress extends the Production Tax Credit we are told that it will be the last year. Although the credit expired in December, the Senate Finance Committee recently approved a \$13 billion, two-year renewal. I fear that this credit will once again be extended.

The Federal Production Tax Credit distorts wholesale electric markets, including the ERCOT market. With wholesale rates that hover around \$40 per MWh in ERCOT, a federal program that pays wind generators \$23 per MWh ultimately destroys the economic underpinnings of the wholesale competitive electric market. As wind installations continue and wind capacity in our market becomes a larger percentage of ERCOT capacity, not because it makes sense from an economic standpoint but because investment is driven by a federal government subsidy, our market faces the very real possibility of losing base load generation. As former Senator Phil Gramm stated in a December 25, 2012 Wall Street Journal article: "The costs of wind subsidies are extraordinarily high—\$52.48 per one million watt hours generated, according to the U.S.

Energy Information Administration. By contrast, the subsidies for generating the same amount of electricity from nuclear power are \$3.10, from hydropower 84 cents, from coal 64 cents, and from natural gas 63 cents.”¹

While this Commission has no ability to change what Congress does, we do have an obligation to Texans to periodically review whether our rules appropriately assign cost to those who cause those costs. I would like to explore the costs of system upgrades, the costs to maintain and operate the current system, and the allocation of those costs specifically related to renewable resources.

Some of the transmission lines built as part of CREZ include series compensation that has the potential to cause sub-synchronous oscillation if the series capacitors that have been installed are taken out of bypass mode. This issue is a consequence of expanding the system to access resources that are located far from load centers. This Commission needs to decide how to address the existing problem, how to avoid this problem in the future, and how to resolve the cost allocation issues of mitigating this risk.

Due to the amount of wind generation that we are now expecting on the transmission lines in the Panhandle, stability concerns and weak system strength will present significant challenges in that area. ERCOT has released a study that recommends system upgrades to address this issue. The transmission facilities in the Panhandle region installed as a part of CREZ included reactive equipment to support 2,400 MW of wind. As we see wind online in excess of 2,400 MW, the system strength will suffer. Under weak grid conditions, a small variation of reactive support results in large voltage deviations.² These potential grid stability issues raise fundamental policy questions. For example, should we ask electric customers to fund further investment in the transmission system to improve stability or should some of the risk be borne by generators? When I review the PURA provisions that approved construction of the CREZ lines, it is obvious to me that the Texas Legislature intended that wind developers should have skin in the game but we need to further flesh out what that means as wind generation becomes an increasingly large percentage of installed capacity in the ERCOT market.

ERCOT is currently evaluating an ancillary services redesign, which gives us an opportunity to examine our current mix of services, those contemplated for the future, and the costs associated with these products. One of the reasons that ERCOT is exploring potential improvements to ancillary services is because some new resources expected to be added to the ERCOT system bring with them additional challenges.³ Given ERCOT’s changing resource mix, I would like to

¹ Phil Gramm, Op-Ed., The Multiple Distortions of Wind Subsidies, Wall Street Journal, December 25, 2012. <http://online.wsj.com/news/articles/SB10001424127887324481204578179373031924936>.

² ERCOT Panhandle Renewable Energy Zone (PREZ) Study Report, April 2014. <http://www.ercot.com/content/news/presentations/2014/Panhandle%20Renewable%20Energy%20Zone%20Study%20Report.pdf>.

³ ERCOT Concept Paper: *Future Ancillary Services in ERCOT*. http://www.ercot.com/content/news/presentations/2014/ERCOT%20AS%20Concept%20Paper%20Version%201_0%20as%20of%209-27-13%201745.pdf.

look at whether there are ancillary services costs that are incurred specifically because of the unique nature of renewable resources.

The ERCOT Board instructed ERCOT to review its transmission planning process. One issue that I would like to explore here at the Commission is whether the production cost savings test, most recently adopted by the Commission in March 2012,⁴ is appropriate for analyzing the benefits of transmission projects, especially projects to address transmission limitations and voltage stability mitigation that will be needed to address a system heavily weighted with wind generation, with a production cost of zero.

I request that Commission Staff open a project with the title “ERCOT Planning and System Costs Associated with Renewable Resources.” If we encounter major policy issues in this rulemaking that we believe cannot be resolved by PURA, we can seek Legislative guidance by including these topics in our Scope of Competition report.

I look forward to discussing this with you at the open meeting.

⁴ *Rulemaking Proceeding to Implement HB 971, Relating to Economic Criteria for a Certificate of Convenience and Necessity For an Electric Transmission Project*, Project No. 39537, Order (March 7, 2012).