



# Renewing Texas Infrastructure

## 2012 Texas Infrastructure Report Card

### Texas Section – American Society of Civil Engineers



## Energy Fact Sheet

### Key Infrastructure Facts: Existing Condition and Performance

- 85% of electricity usage (75 percent of the geographic area) in Texas is served by the Electric Reliability Council of Texas (ERCOT).
- The remaining 15% of the electric usage is in the Western Electricity Coordinating Council (WECC), Southeastern Electric Reliability Council (SERC) and Southwest Power Pool (SPP) where limited or no information specific to Texas is available.
- Currently in ERCOT there are 72,500 megawatts of generation with a load of 66,000 megawatts and surplus reserve margin of just over 12% - below the 13.75% target for the ERCOT region. This relatively low reserve margin is likely to contribute to volatile electric prices in Texas over the next several years. [Note: The December 2011 reserve margin assessment did not include 1,130 megawatts of coal generation that had previously been scheduled for suspension of operations due to EPA regulations. A federal court stay of the EPA order has allowed the generation to continue operations. This, along with some other changes in early 2012, increases the effective level of the reserve margin to 14%.]
- In 2011, approximately 40% of the electricity in Texas was generated using natural gas as the primary boiler fuel, 39% from coal, 12% from nuclear, and the rest from wind and other renewables.
- There are 40,500 miles of transmission lines in the ERCOT which is sufficient to assure the reliable transport of electricity to the loads.
- Because the transmission system was deemed inadequate in areas to transport renewable power to the market and insufficient to allow economic dispatch to take full advantage of all the new, clean, efficient generation that has been built since the industry was restructured, the PUCT in 2008 established 5 Competitive Renewable Energy Zones (CREZ) and assigned 2,300 miles of new transmission projects to several entities. All of the projects are expected to be completed by the end of 2013 and estimated to cost \$5-7 billion.
- Distribution systems are predominately owned by the incumbent utility which has the Certificate of Convenience and Necessity (CCN) filed at the Public Utility Commission of Texas (PUCT).

### Anticipated Growth and Other Future Needs

- Over the next ten years the load in ERCOT is anticipated to grow by more than 25% with approximately 6,000 megawatts of new generating resources currently projected to be added.
- A reserve margin of less than the 13.75% target implies an increased possibility for high power prices during times of energy scarcity. It also increases the risk of rotating outages which are used to curtail load when necessary to protect grid stability. The PUCT is evaluating options for improving short-term and long-term resource adequacy.
- Distribution systems will continue to see investments to meet the load growth as well as reinvestment to address reliability and obsolescence issues.

## **Adequacy of Current Funding and Need for Expanded Funding**

- Funding for new generating units is projected to be less than \$1 billion over the next five years, sufficient given the current glut in the generation market. Higher wholesale market prices could induce more investment by the private sector. Almost \$8.7 billion in transmission improvements are planned through 2017. This level of expenditure is necessary to improve the transmission system in ERCOT to assure reliability and accommodate market related issues and is funded through the consumer's electric bill.
- Distribution investments are regulated by the PUCT and will be adequate to assure that new customers are connected and that all customers receive reliable retail delivery of electricity.

## **Sources**

- Report on the Capacity, Demand and Reserves in the ERCOT Region, December 2011 ([www.ercot.com](http://www.ercot.com))
- Presentation on Wind, Solar & Storage, Public Utility Commission Chairman's Perspective on Renewable Energy, Storage Technologies, and Resource Adequacy, February 2012
- [2011 Electric System Constraints and Needs Report](#)
- Input received from Summit Power Consulting, March 2012.
- Input received from ERCOT, April 2012.