

# Winds of Prosperity

The Impact of the Competitive Renewable Energy Zone (CREZ)  
Investment in Transmission Infrastructure and the  
Potential Effects on Renewable Generation,  
Electricity Cost Savings, and Economic Development

*Summary of Findings from a May 2010 Study by The Perryman Group*

Over the past decade, **clean energy has taken on new importance as a social and economic priority.** The industry cluster has already experienced considerable growth, particularly in the area of wind power. In fact, the US now leads the world in wind capacity.

**Texas has been the site of much of the new development and now surpasses all other states in terms of total wind capacity.** These investments have led to a notable stimulus to business activity. In fact, The Perryman Group (TPG) estimated the total impact of **construction of wind capacity** prior to recent initiatives to include **\$26.1 billion in total spending, (in constant 2009 dollars), \$12.6 billion in output (gross product), and 157,728 person-years of employment (full-time equivalent jobs during the build-out period).**

**Ongoing operations of these facilities lead to gains of \$1.6 billion in annual total spending, \$530.9 million in output each year, and 3,876**

**permanent jobs. When current manufacturing and related activity is included, the total effects rise to almost 10,000 jobs.** Expansion of wind generation has outpaced the capacity of transmission lines within the state, and investment in infrastructure is now needed to assure ongoing development.

To alleviate current constraints and accommodate future growth, ERCOT (Electric Reliability Council of Texas) is reviewing several **proposed transmission projects spanning the next five years,** including the recommended Competitive Renewable Energy Zones (CREZ) transmission investments with an estimated cost of around \$5 billion. This **initiative allows the transmission of power from wind-intensive regions of the state to population centers with growing needs for power.**

Obviously, all generation capacity, irrespective of fuel source, must be integrated into the power grid through transmission and distribution facilities.

Increased transmission infrastructure connecting CREZ with the ERCOT grid will allow for **greater development and utilization of the state's wind capacity as well as conservation of crucial resources such as water.** In fact, the build-out of CREZ is predicted to conserve approximately 17 billion gallons of water annually and lead to reductions in emissions including up to 16% in CO<sub>2</sub> and 13% in NO<sub>x</sub>.

As an outgrowth of this expansion, the state's position at the forefront of installing wind power should **encourage development of wind-related manufacturing businesses** (which are already beginning to locate in Texas) as well as **other related maintenance operations and associated firms.**

In addition, **as the mix of fuels used for power generation in Texas becomes more diverse, cost savings can be expected.**

The ERCOT service region is subject to wholesale

electric competition, and much of it also embodies retail competition.

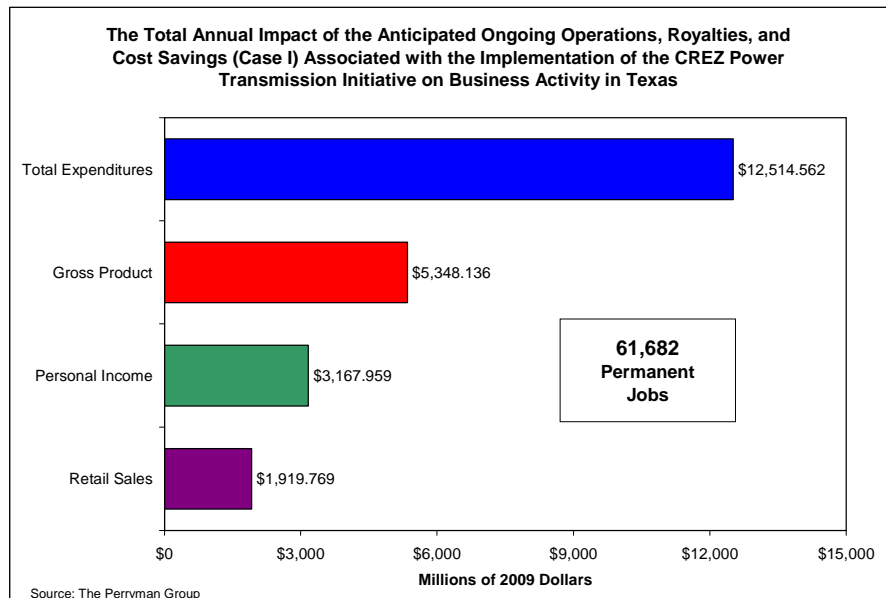
**Because wind turbines never have to pay for fuel, their cost of operation does not increase the more they are used.** So, as more wind power becomes available on the market, it has a greater influence on wholesale market prices. The net result is a lower overall cost of electricity. This results in **reductions in rates for residential, commercial, and industrial customers that exceed the long-term cost of the CREZ investments.** This effect already has been seen in the West Texas wholesale market for electricity.

The Perryman Group found sizable positive economic impacts of the CREZ transmission investment on business activity. These benefits are **realized across the entire ERCOT region**, both near the transmission route and elsewhere. They are also **enjoyed by Texans in many occupations far removed from power generation.**

The combined impact of **construction and development of new power transmission facilities as well as wind turbines** required to achieve the newly

expanded capacity on business activity in Texas is projected to total **\$30.6 billion in output (gross product) and some 383,972 person-years of employment.** This economic activity leads to **notable incremental tax receipts** over the development period; TPG estimates the gains to include about \$1.6 billion

Two scenarios were formulated to illustrate the potential gains from fuel diversity with varying assumptions regarding input fuel prices. The first case assumes average generation fuel prices over the 2003-2009 period; the total ongoing impact of the CREZ transmission investment is some **\$12.5 billion in**



for the State and \$329.1 million for various local governments.

The three major categories of **ongoing effects stemming from the CREZ transmission investment** (operations and maintenance of the transmission facilities and wind farms, royalty payments, and cost savings stemming from improved fuel diversity) can be summed to obtain the total benefits the program will generate.

**annual total spending, \$5.3 billion in output, and 61,682 jobs.**

This additional business activity, in turn, leads to increased tax revenue and other receipts to various taxing entities. Under Case I assumptions, the **total positive effect on fiscal receipts to the State is estimated to be \$365.8 million per year, with \$160.4 million per annum in gains to local governments.**

Under Case II assumptions regarding generation fuel prices (average of 2008), the fuel diversity benefits (and, thus, overall effects) rise substantially. For the state as a whole, the **total ongoing effect of the CREZ investment includes an estimated \$23.6 billion in annual total spending, \$10.5 billion in output (gross product) each year, and 125,915 permanent jobs.**

The increased economic activity leads to **additional fiscal receipts to the State of an estimated \$758.0 million per year, with \$330.2 million to local governments.**

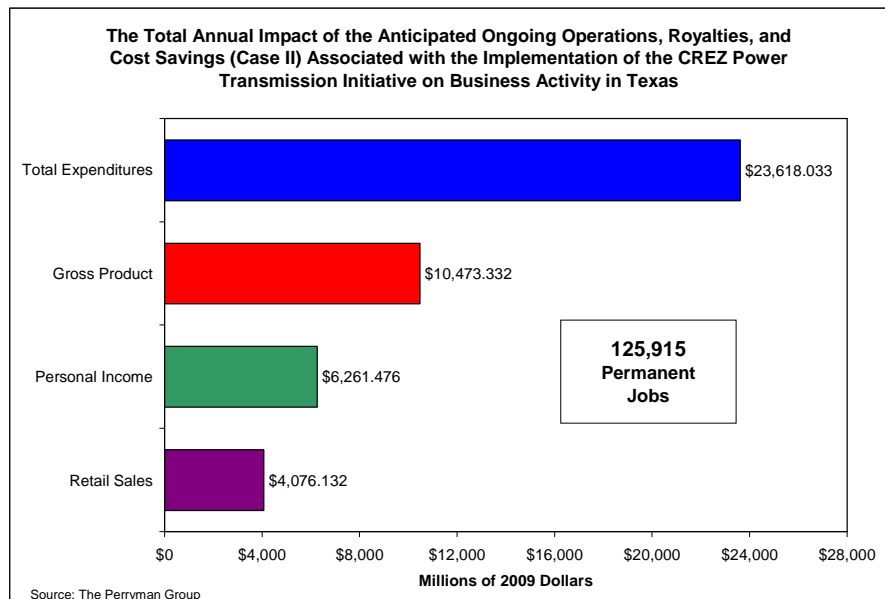
Due to the growth in power demand and the emerging use of various fuels in alternative contexts, the implementation of CREZ is not expected to have a notable effect on the demand for other types of energy produced in Texas.

The increased business activity includes billions of dollars in total spending and output as well as tens of thousands of jobs. To put these in perspective, The Perryman Group calculated the **percentage increment to projected economic activity at project maturity** (approximately 2017) the CREZ-related investments would entail. Depending on the assumptions related

to overall generation prices, the **total ongoing effect of the CREZ transmission investment includes a 0.3 to 0.6% addition to Texas output and income and a 0.4 to 0.8% increase in Texas jobs. The Case I level is about equal to the direct**

\$995.60 in total spending and \$216.76 to \$478.03 in gross product.

The CREZ transmission investment will also **help solidify Texas' position at the forefront of wind power, renewables, and associated industries.**



**activity of the air transportation sector in the state, and the Case II effect is approximately the same as the direct production of computers and electronics.**

Another perspective is on a **per-customer basis.** Depending on the levels of overall generation fuel prices, **the typical residential customer at project maturity will save between \$160.93 and \$354.94 per year** (fully accounting for incremental transmission costs), resulting in a stimulus to the economy of \$454.44 to

Incremental gains in the cluster stemming from the CREZ transmission investment could be expected under reasonable assumptions to include **\$8.6 billion in total annual spending, \$3.8 billion in output (gross product) per annum, and 41,181 jobs.**

**Clearly, this ambitious and enlightened investment stands to pay notable dividends to Texans and permit the state to enjoy the "winds of prosperity" for generations to come.**