

# TEXAS BUSINESS

## POWERING UP WITH RENEWABLE ENERGY



By Alan Lammey

**A**s the Texas economy continues to grow, electricity consumption has increased for businesses and residences alike. However, environmental regulations and various market pressures have forced a significant amount of power generation, including coal-fired power and other older sources, to exit the market in recent years. In order to replace part of the outgoing generation, new solar and wind capacity has been constructed (as required by law in many cases) in order to meet a large percentage of the Texas market's demand. With appropriate state policy that removes market barriers and recognizes the benefits of renewal energy, the Texas solar and wind power market should see significant growth in the coming years, bringing new renewal sources of energy to Texas' businesses and residents.

While the Lone Star State is well-known for its oil and natural gas assets, renewable energy in Texas has been quietly gaining traction—a lot of traction. In fact, there are currently more than 290 solar companies at work throughout Texas, employing approximately 4,100 people. In 2013, Texas installed 75 megawatts (MW) of solar electric capacity. In fact, Texas ranks 13th in the country in installed solar capacity with a total amount of 213 MW of energy.

This is enough energy to power 23,000 homes. In fact, last year, \$174 million was invested in Texas to install solar for home, business, and utility use. This represents a 4 percent increase over the previous year and is expected to grow again this year. Meanwhile, the price to install solar in homes and businesses has dropped by nearly 4 percent from last year and 37 percent from 2010 across the country.

### Big Stores Utilizing Big Solar Systems

With the cost of solar becoming much more affordable in recent years, some large big box retailers, such as furniture giant IKEA, have recently embraced the use of solar energy at their Texas locations, including the store in Houston. When combined with IKEA solar systems installed at stores in Frisco and Round Rock, Texas, IKEA has the distinction of being the state's largest solar owner. According to IKEA, their Houston 116,400-square-foot photovoltaic (PV) array consists of an 813-kW system, built with 3,388 panels. The program will produce approximately 1,152,464 kWh of clean electricity annually, the equivalent of reducing 795 tons of carbon dioxide, eliminating the emissions of 156 cars or powering 99 homes yearly. This investment by IKEA reinforces the company's long-term commitment to sustainability and confidence in PV

technology. IKEA owns and operates each of its solar PV energy systems from atop its buildings as opposed to a solar lease or power purchase agreement (PPA). For the development, design, and installation of the Houston store's customized solar power system, IKEA contracted with REC Solar, one of the largest U.S. solar electric installers with more than 8,000 systems built nationwide.

Another type of solar power that's gaining a lot of interest in the office building construction niche is known as building-integrated photovoltaics (BIPV), where the power-generating features are built into the glass and construction of office buildings. The advancement in technology of BIPV has allowed for the integration of solar systems in office buildings and factories, which generate energy consistently during daylight hours while not requiring additional expensive land space or unsightly installations. The market for solar built onto the outside facade of buildings and into building materials is expected to grow to \$7.5 billion by 2015 from about \$2.1 billion in 2011, according to some industry statistics, while sales of solar glass are expected to reach as much as \$4.2 billion by 2015. The outdoor retailer, REI, has employed various forms of BIPV into the design and construction of its stores with one example located in Round Rock, Texas, which generates about 8 percent of its own power needs.

## Texas Wind Generation

While solar energy is a growing force to be reckoned with, the largest of the renewable sources of energy in Texas is, without a doubt, wind power. In fact, Texas has become the national leader in wind energy, with more installed capacity and more wind turbines than any other state in the U.S. Texas wind also leads the U.S. in thousands of jobs and provides billions of dollars in economic benefits. To date, installed wind power generation capacity is at 12,355 MW, which ranks the Lone Star State first in the nation for total MW installed. According to the Electricity Reliability Council of Texas (ERCOT), 11,000 MW of generators already contribute to the grid, and another 8,000 MW are due to come on line shortly. In addition, more than 26,700 MW are under study. In 2013, wind power contributed 9.9 percent to the state's overall electricity supply, up from 9.2 percent the year prior. With recent forecasting tools and a proactive approach to wind development, Texas is helping to demonstrate where this resource can go.

With wind power, there's another benefit that isn't just strictly about producing electricity; wind also conserves water. With a large percentage of Texas remaining in exceedingly high multi-year drought conditions, the state is always seeking new methods to safeguard water supplies. As with other forms of power generation, which utilize massive amounts of water in the generation process, wind power doesn't require any water, which is a feather in the cap of wind energy proponents.

Wind energy has become such a significant power generation source that earlier this spring, ERCOT announced that an all-time high wind power utilized capacity record was achieved in March: 10,296 MW. This represented close to 29% of the nearly 36,000 MW of electricity on the power grid at the time. According to the American Wind Energy Association, this is the most for any U.S. power system to date. Of that wind power produced, 1,433 MW of the wind resource came from turbines on the Gulf Coast while 8,863 MW came from other regions, mostly West Texas. Many Retail Electricity Providers in Texas now offer "100 percent Wind" or

"Renewable Energy" as electricity fuel choices for businesses and residences.

While traditional forms of power generation from coal to natural gas to nuclear will most certainly play a large role in electricity needs of Texas residents for many years, renewable energy is here to stay and is certain to continue to make up an incrementally

larger percentage of electricity generation capacity for years to come. **N**

*Alan Lammey has 16 years experience as a senior markets analyst and journalist and is best known for his forward-thinking energy market analysis. He can be reached via [www.TexasEnergyAnalyst.com](http://www.TexasEnergyAnalyst.com) or [alammey@TexasEnergyAnalyst.com](mailto:alammey@TexasEnergyAnalyst.com).*

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