

Guest Commentary

Powering Texas' future: Energy for sustainable growth

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Date: Friday, April 15, 2011, 5:00am CDT

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Since the days of Spindletop, Texas has been an icon of oil and gas production and, in the last few decades, has become not only the nation's leader in energy production but its largest consumer of energy, as well.

As our state's population growth begins to outstrip the ability of traditional energy sources to keep pace, Texas is at a crossroads. Despite possessing a quarter of the country's oil reserves and 30 percent of its natural gas, Texas must soon embrace a range of renewable energy sources to support its rapidly expanding population and robust economic growth.

On April 20, the Academy of Medicine, Engineering and Science of Texas will hold the 2011 Texas Energy Summit in Houston to begin building a road map for the future of Texas energy. Hosted by Texas A&M University and The Texas A&M University System, the objectives of this summit are to examine the challenges and identify the issues that require action by the Legislature or state regulatory agencies; identify scientific and engineering studies needed to address these challenges; and determine how the scientific community can work with the state to meet its long-term energy needs.

The Texas Energy Summit will bring together the state's energy leaders from industry, academia and government to explore three essential areas of the Texas energy landscape: electric power generation, transportation fuels and energy policy and regulation. Speakers will weigh the benefits and risks associated with coal, natural gas and renewable energy options. In light of recent events in Texas and Japan, presentations from experts on transmission and smart grid technologies and nuclear power will be especially relevant.

Texas has a strong and relatively diverse electric generation portfolio, with strong contributors in coal, natural gas, nuclear and even renewable energy. In fact, Texas already leads the nation in wind power capacity. Nearly 8 percent of the power on the state's electric grid was generated by wind in 2010 — more than three times the national average, and a \$5 billion transmission line build-out could nearly double the capacity currently on the state's grid.

Texas is the 10th-largest solar photovoltaic market in the country increasing its ranking by two positions from 2009. The Blue Wing solar project in San Antonio, activated last November, accounted for much of Texas' increase, providing nearly two-thirds of the photovoltaic solar energy installed in the state last year. Currently there is no statewide program to encourage adoption, and there are far fewer incentives compared to leading solar states, such as California and New Mexico.

In traditional energy generation, Texas recently added several coal-generating units, and coal produced more power than any other electricity source in 2010 for the first time since at least 1990, accounting for 39.5 percent, according to the Energy Information Administration. Texas did not begin building coal plants until the 1970s and 1980s, so our coal generation facilities are more efficient than many operating elsewhere in the U.S. The percentage of Texas power generated from natural gas dropped from 42 percent in 2009 to 38 percent in 2010. During 2010, nuclear power's contribution maintained previous levels at 13 percent of generation.

Cost-effective transportation of people, goods and services is critical for sustaining a vibrant economy and promoting growth. In transportation, Texas is best served by developing a portfolio of energy solutions that incorporates affordability, accessibility, reliability and consideration of environmental impact. Transportation topics to be addressed at the 2011 Texas Energy Summit include the use of ethanol as a viable fuel solution, natural gas and electric vehicles and the use of high-speed rail for cost-efficient freight distribution.

Finally, a certain hot topic at the Texas Energy Summit will be the complexity of regulating Texas energy. Doing so is inherently complex, but it achieves new levels of complexity in Texas with its own electricity distribution grid, as well as numerous agencies with oversight of production of natural resources. Texas has a proud legacy of energy leadership due to our wealth of natural resources in oil and gas and the production technologies we have developed to extract them. Thankfully our natural resources are numerous and extend to several additional areas of great energy potential including wind, solar, biomass, hydrokinetic, geothermal and other emerging technologies.