



Energy from wind anything but free

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Everyone seems to have an energy plan these days.

Barack Obama wants to "put 1 million plug-in hybrid cars - cars that can get up to 150 miles per gallon - on the road by 2015." John McCain said he would "commit \$2 billion annually to advancing clean coal technologies."

Most energy plans are built on the premise that government has to do something to solve our energy challenges. Translation: promote green or renewable energy through mandates and substantial subsidies paid by consumers and taxpayers.

But these fail to take into account their true cost and practicality, or any alternative means - like the marketplace - by which our energy goals might be achieved.

Texas' renewable energy mandates - combined with the federal government's generous tax credit for wind-energy production - have propelled the Lone Star State to the forefront of the wind-energy movement. Billions of dollars in capital investment have muted most criticism of wind energy's rapid expansion, but only because Texas consumers have yet to realize the long-term price we will pay for everyone else's short-term gain.

And pay we will. My just published study, "Texas Wind Energy: Past, Present, and Future," estimates that forcing even modest levels of wind energy generation on Texans will cost ratepayers and taxpayers up to \$4 billion a year, and at least \$60 billion through 2025.

But cost isn't the only challenge that confronts wind energy's expansion. Its intermittent nature, the lack of large-scale electricity storage, and the limitations on electric transmission also limit the role wind can play in powering our future.

The greatest impediment to wind's large-scale contribution to our energy supply is its intermittent nature. The wind must blow in order for wind turbines to produce power - peak capacity comes when the wind blows around 31 miles per hour. But because those conditions are rare, wind turbines do not produce more than about 30 percent of their installed capacity over time.

Making matters worse, in Texas the wind blows the least when we need it the most. The Electric Reliability Council of Texas assumes that wind turbines will produce a mere 8.7 percent of their installed capacity during peak summer hours.

Wind's intermittency means that if you want your light to turn on each time you flip the switch, you'd better be packing more than windmills.

Intermittency is an issue for wind because electricity cannot currently be stored on a commercial scale.

Without adequate wind-power storage, wind-generating units must be backed up by units that generate electricity from conventional sources. In Texas' case, that means natural gas, a fuel source with extreme price volatility.

Thus, wind energy is currently an inherently less valuable resource than fuel sources requiring no backup. Although efforts to develop large-scale storage are underway, such technology is probably decades away.

Finally, Texas lacks the infrastructure to transmit wind-generated electricity from proposed West Texas wind farms to our metropolitan areas. Of course, infrastructure can be built for the right price. For Texas consumers, that price should top \$17 billion by 2025.

So much for free wind energy, as some would claim. Of course, wind itself is free, but energy from wind is anything but. Combining the transmission costs, production costs, subsidies, tax breaks, economic disruptions, and grid management costs produces a \$60 billion price tag.

Wind, like every other energy resource, has its pros and cons, and there is no doubt that wind power should be part of the nation's energy supply. We need a variety of fuel sources, plus concerted efforts at conservation and efficiency, in order to meet our energy needs. But the marketplace - rather than government mandates and subsidies - is the means by which all of this should be determined. Otherwise, higher electricity prices will be here to stay.

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