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## Is renewable energy affordable?

*H. Sterling Burnett and Bill Peacock*

Even though oil is not a significant source of fuel for electricity generation, recent spikes in oil prices have increased fears that affordable supplies of fossil fuels are running short, heightening interest in renewable energy. After all, it isn't likely that we will run out of sunlight, water and wind.

However, abundant supplies of renewable resources do not guarantee abundant supplies of affordable energy. Even with sizable subsidies, renewable energy is generally more expensive than energy produced from nonrenewable sources. We rely on oil, natural gas, coal and even nuclear power today because they provide us with more efficient and affordable energy than renewable alternatives. And they are likely to do so for many years to come.

In Texas, for instance, most renewable energy comes from the wind, with west Texas the best place to find it. Unfortunately, the greatest need for energy is along I-35 and the Texas Gulf Coast. At over \$1 million a mile, it is very expensive to build the infrastructure necessary to get west Texas electricity to the customers who can use it.

And years of federal subsidies for wind-generated energy have not greatly reduced this cost. For instance, for every thousand kWh of energy produced in the late 90's, the United States government spent more than \$4,700 on wind research and development. By comparison, the federal R & D investment in nuclear and coal power was only 5 cents per thousand kWh. Even with these large investments of tax dollars, wind power costs 20 to 30 percent more – and still accounts for less than 1 percent of the electricity generated in the U.S.

Because of intermittency problems, i.e., the wind isn't always blowing when the system needs electricity, wind farms need conventional power plants to supplement the power they do supply. Bringing a conventional power plant on line to supply power is not as simple as turning on a switch; therefore most "redundant" fossil fuel power stations must run, even if at

reduced levels, continuously. This redundancy is expensive – comparable to an individual having to constantly maintain and idle a second car because 60 percent of the time the “primary” car didn’t run.

Wind power’s intermittency problems also mean that it is not as “clean” a source of energy as it is promoted. Combined with the pollutants emitted and CO2 released in the manufacture and maintenance of wind towers and their associated infrastructure, substituting wind power for fossil fuels does not improve air quality very much.

Renewable energy sources may be a sound alternative to fossil fuels someday – if and when it is, companies will bring it online without any encouragement from government. In the meantime, state policy makers should approach energy the way doctors approach a patient: First, do no harm.

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