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Are Hybrid Cars the Answer?

In November I wrote an article about electric hybrid cars. With the cost of gasoline hovering around $3 per gallon, electric cars are again a hot topic. A friend of mine wrote the following in response to that article.

"How many people would it take, charging batteries for electric cars, to use up all of the electricity being generated in the country? How realistic is it to consider electric cars on a large scale with the current available power generation, and where would additional non-polluting, non-nuclear, non-oil based power come from?"

I did some rough calculating and found it would take about 500 large power plants the size of the Calpine plant in Goldendale to supply enough energy for electric cars. This would require roughly a 40-percent increase in production of electricity, an average of 10 power plants for each state.

As far as "how" this could be accomplished, there are a lot of ways to generate more electricity. The least costly now is coal at under 3 cents per kilowatt-hour (kwh)—America's ace in the hole.

In the East, more than 75 percent of electricity is generated by coal. However, there is a lot of "not-in-my-backyard" sentiment about coal. Actually, today's coal is pretty clean, but definitely not yet at zero emissions.

The industry is working toward zero emission coal. This involves gasification prior to burning and CO^2 sequestration afterward. It is anticipated this will double the cost of power per kwh.

Wind power costs a little more than 4 cents per kwh and produces zero emissions. There is a limit to how much wind we can integrate because of the variability of the resource. But here in the Northwest, we have a lot of wind that can be integrated before we have to add other resources just for reliability.

Charging of hybrid cars could actually help the situation. Off peak and smart charging can automatically have battery chargers draw power at times when we have excess generation, and delay charging in response to peak loads from other power demands. There could be an override feature to allow charging for people who need it sooner. But time-of-use metering would make it more cost effective for those who could wait.

At today's electric rates we would be able to fill up our tanks for the equivalent of 50 cents per gallon, and the environment would be a lot better off.

Tom D. Svendsen, General Manager

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