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Don't go off course in developing wind energy

Renewable energy is on a roll. For the first time in our history, the country appears to be getting serious about shifting away from near total reliance on fossil fuels and laying a foundation for a truly sustainable future.

As important as this shift is for the long-term future of our country, near-term economic health dictates that we do this shift well. There is a danger that too much momentum may lead us to making some bad decisions, albeit for good reasons.

At the core of the issue is the broad and complex set of problems that fall under the term "grid integration." There are many engineering details involved, but the overarching need is to ensure that the grid remains in balance. At any given time, the amount of electricity being consumed by the users of electricity (like you and I) must be closely balanced by the amount of electricity being generated by facilities such as hydroelectric dams, coal-fired power plants and wind turbines.

Given the complexity of this issue, it is surprising that our system of distributing electricity remains as reliable and safe as it is. Short of weather-related problems, usually in the form of downed power lines, disruptions in electrical services remain very rare occurrences. Wind-generating systems present a new problem to grid operators. The inherent fluctuations that occur as winds change bring additional variables to what was already a difficult problem.

A recent study published by the U.S. Department of Energy demonstrates a scenario by which the United States can generate 20 percent of its electricity needs through wind turbines by the year 2030. According to this report, the problem of balancing is solved mainly through the use of natural gas turbines, an established technology that can be smoothly and easily adjusted to accommodate variations in need. While I have no doubt that the report is technically accurate, I feel that there are two fundamental flaws in this line of reasoning.

First, the report doesn't address the next question: Who will invest in or build a gas turbine power plant that will only make money when the wind stops blowing? If the facility is capable of running nearly constantly, why would you shut it down just because someone else's wind farm is generating electricity? The fact that there are no incentives to build these new gas plants is a big hole in the current thinking.

Second, the report wrongly perceives 20 percent wind generation as a destination, not just a milestone along a much longer journey toward 100 percent renewable energy. We've been relying too long on the fossil fuel endowment of this planet. It's time to live within our budget of incoming solar energy (which drives hydro, wind and waves). Relying on a fossil fuel to enable wind energy is a step in the wrong direction.

What is needed is increased investment in research and development of energy storage technologies. Many such concepts exist and some have been demonstrated, but none are available at the scale and economic effectiveness needed to embrace the true potential of renewable energy in this country. Pumped hydro energy storage is one of the most promising, but it requires a site with suitable elevation changes and is economically feasible only when the dam operators can charge a variable rate for the power produced.

Make no mistake, I am a big proponent of expanding the development of wind generation facilities here in Idaho and across the country. In my opinion, wind energy represents an excellent trade-off of economics, environmental impact and long-term benefit. Free of the economic and environmental risks of fossil fuel, investment in wind generation is money well-spent as we strive to overcome the problems of meeting the nation's energy needs.

I am also in favor of getting all the facts on the table and ensuring the public understands the important implications surrounding the increase in wind energy generation.

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