ENERGY NEWS DATA

Clearing Up / Bearing Down

[June 6, 2011 / No. 1495]

On Wind, Whine, Subsidies and Limits

In June 2002, my wife Janice and I joined a two-day "wind and wine tour" of southeastern Washington. The trip, sponsored by Peninsula Light Co., featured stops at three wineries and the Stateline wind project on the Washington-Oregon border.

This sojourn was delightful--good company, educational, sunshine, fruit of the gods, and even a three-hole pitch-and-putt golf course at one of the wineries. At the time, wind was nascent as a commercial Northwest resource--less than 500 MW total installed in the region--and its promise stretched as wide as the east-of-the-Cascades sky.

Fast forward nine years, and a 10-fold expansion (and counting) of regional wind capacity.

Now comes another "wind and wine" event, but this time with an h added: wind and "whine." I refer to the rhetoric from some wind-industry quarters over BPA's "environmental redispatch," in which the agency--facing huge river flows, spill constraints for total dissolved gases, low off-peak demand and a limited market for even free hydropower--has periodically curtailed wind generators in its balancing authority as a last-resort measure. After thermal generators are shut down, mind you. And, after BPA offers free hydro as a substitute.

The environmental redispatch narrative from some wind folks is rife with outrage and a hyper-sense of victimization. Which, in my opinion, is unseemly.

Here we have a near-emergency on the Federal Columbia River Power System, with the joint forces of Mother Nature, gravity, federal environmental laws and markets severely restricting options. And here we have some members of a very-well-subsidized industry--that would be wind--tossing a fit over the temporary and modest loss of some of those generous subsidies.

The wind industry could have taken the high road--grudgingly acknowledge BPA's no-win situation, swallow short-term consequences, and continue advocating for and partnering on longer-range solutions. Some wind people, including many from our region, have done so. But others, particularly on the national scene, have instead traveled the rhetorical low road, even at times detouring from facts and reality.

A media event at the American Wind Energy Association's recent WINDPOWER 2011 conference in Southern California was telling.

For example, one AWEA official claimed "thousands of megawatts" of fossil-fueled generation were operating while BPA was curtailing wind. But that's false. A real-time BPA graph showed thermal generation in its balancing authority throughout this period peaking in the very low three-figure megawatts. In addition, BPA has repeatedly said thermal generators are curtailed before wind, absent reliability or safety necessities.

This same AWEA official also suggested BPA could have transmitted more power to markets up and down the West Coast. That, however, is detached from reality. BPA has given away free hydropower--150,000 MWh as of May 25--but has found very limited markets even for free power in the springtime wee hours when environmental redispatch has typically been called. "We are not seeing load at that [free] price," said a BPA official. (A California Independent System Operator official on a BPA conference call confirmed the Golden State had been experiencing excess supply and near-zero prices as well.)

Among other rhetorical salvos from this AWEA media event: BPA is contradicting Obama administration support of renewable energy; favoring public-power utilities over wind, by not paying for curtailments; and sending a "chilling" signal for future wind development in the region.

That first point is questionable, especially in the larger context of the facts that BPA has already interconnected 3500-plus-MW of wind capacity, and is either building or planning four 500-KV transmission lines that would accommodate 2800 MW of additional wind.

The second accusation is likely true, but with justification--especially considering most wind generated within BPA's balancing authority is earmarked for elsewhere, conferring little benefit to BPA customer utilities and their customers.

And the third is overwrought--wind developers will always seek the best opportunities, and Northwest renewables portfolio standards alone will keep those folks in business here for a long time (see below).

One point made during the media event I think has widespread agreement: BPA's asserted legal right to curtail wind, under environmental redispatch, is likely to be tested.

But regardless of the outcome in the legal/regulatory arena, let's step back and examine the true nature of the wind industry's displeasure here. It has nothing to do with serving load, ensuring reliability or even selling power into the market--and everything to do with wind's business model and its outsized reliance on subsidies.

Some key benefits already accruing to wind:

A federal production tax credit, now worth 2.2 cents/KWh over the first 10 years of operation. This applies to wind, geothermal and closed-loop biomass (other renewables get 1.1 cents/KWh), but in practice is mainly a wind thing.

BPA has estimated about 30 percent of wind in its BA gets the PTC. Let's do a little math. Thirty percent of the 3500 or so MW of wind capacity in BPA's BA equals about 1050 MW. Assuming an average 30-percent capacity factor, this translates to about $60 million in PTCs over one year, by my reckoning.

By one account I saw, PTCs and renewable energy credits can combine for up to half of a wind project's revenue. The factors making up this revenue include:

- Federal cash grants equivalent to 30 percent of a wind project's development cost, in lieu of investment tax credits or the PTC, for projects starting construction by year-end 2011.
- Federal accelerated depreciation, over five years, enabling significant tax-deduction benefits.
- Sundry tax breaks by non-federal governments, including for property, sales and income.
- For smaller wind projects, eligibility to receive mandatory avoided-cost rates under PURPA, a 1978 law designed to encourage alternative energy resources.
- Renewables portfolio standards enacted in 29 states provide a huge mandatory market for new wind, as generally the most commercially advanced and cost-competitive of large-scale renewables.

Regarding the portfolio standards, the Northwest Power and Conservation Council recently estimated state RPSs in Washington, Oregon, Montana and California could lead to 5 to 10 GW of additional wind development in our region by 2025. Just for perspective, BPA's total load over the past week (admittedly a low-demand period) has generally hovered in the 5- to 6-GW range.

And anymore, these various subsidies and mandates are not necessarily bootstrapping the little guys. The leading U.S. wind-turbine manufacturer is a division of General Electric, No. 6 on the Fortune 500 list (2010 revenues for GE Energy: $38 billion). And by far the biggest U.S. wind-energy supplier is NextEra Energy Resources, whose parent NextEra Energy, is a Fortune 200 company.

It is true other energy resources get subsidies as well. But wind clearly gets a goodly share of governmental support.

Wind deserves a spot in the resource portfolio, certainly to the extent it can be sited and transmitted, and its output sold at competitive (if subsidized) prices to utilities or the market. It is clean and renewable, and it does generate economic development, particularly on the local and rural levels.

Part of me wants to acknowledge the wind industry has every right to pursue its own self-interest, in whatever forum or manner it chooses. This is America.

But part of me wonders . . . How much is enough? Especially for an energy resource with capacity factors averaging roughly 30 percent, and minimal contributions to meeting ever-more-important peak demand. And whose ongoing expansion will require a lot of new transmission, whose costs are likely to be heavily socialized--another public benefit--and which, in any event, will prove very difficult to actually get built.

Part of me also bristles at the implicit notion wind is entitled to endless double-digit growth rates, forever and ever, irrespective of load, market, economic or other conditions. Nor is federal/state largesse from now until the end of time an inalienable right.

By all means, let's continue seeking ways to avoid environmental redispatch in future wet years. A BPA document outlines numerous current, near-term and longer-term options, from transmission availability to thermal displacement to water-shifting to--in the longer future--energy storage and smart-grid opportunities. And in the meantime, if a near-term agreement on environmental redispatch is reached between key parties, great.

The reinvigorated Northwest Wind Integration Forum can play a pivotal role also, on this and other topics related to accommodating variable wind power.

As this turbulent spring gives way to a (presumably) calmer summer on the FCRPS, it's apropos to also consider the larger question here--namely--what is the role and the ultimate scope of wind energy?

There have to be limits somewhere for wind. BPA drew one line in the sand with environmental redispatch. I think more boundaries are likely to follow ***[Mark Ohrenschall]***.
