

Dear Editor:

I would like to weigh into the windmill debate, because I think there is key point that may not be understood by the average person outside the power industry and that I feel people may want to consider while evaluating the pros and cons for supporting additional wind power development in our region. I want to say that I, too, still struggle to some degree with the issues, and have not yet made up my mind that ALL regional wind projects are a bad idea, but I do think MOST are. Further, let me say that I do appreciate the thoughtful letters, such as the one from Ms. Haning in the last Voice, who attempt to logically rationalize the difficult decision to support wind power in WV, and avoid being perceived as hypocritical. Again, I feel a key point is missing, and that for many WVHC members, it may be a pivotal consideration.

**Materiality !!!** *These wind* projects, which often require MILES of Appalachian ridgetop, don't add up to a hill of beans in our struggle to meet our glutinous electric energy consumption requirements. As my wife can attest to, we often get locked in debate due to her tendency to elevate principle over practicality, but I just can't get myself to ignore the realities and practicalities we face while trying to right the environmental wrongs our society inflicts on our planet. We conservationists need to pick our fights, and we often times could benefit from taking practicality, or "materiality" into account. I think wind power is one of those issues where you need to consider the facts (not mentioned by developers, who just play up the "green" aspect of their project) !

Some of these proposed projects are only for 10-20 turbines, some are for up to 100-150. Power is measured in Megawatts (MW). With current technology, most wind turbines only produce about 1 MW (max), but apparently some new technology on the horizon may bring even larger 3MW turbines. But let me stick with today's turbine size to make the following points. Even a 50 turbine (approximately 50MW) project just isn't a material dent in our energy consumption. I have seen the infrastructure and land use required for just some small wind projects up here in PA near Somerset and Mill Run. I can't imagine the ridge top required for 50, 100 or 150 turbines, given the required spacing. **It would take 22 individual projects, EACH with 50 turbines, just to amount to the maximum MW output of one modern, high efficiency and (relatively) clean burning natural gas "combined cycle" power plant** (a standard size is 1,100 MW).

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MOREOVER, wind power makes even a much lower beneficial impact on our electric power supply availability since it is controlled by the vagaries of the wind...which almost never correlate well with the demand for electricity !! That gas plant gives you 1,100MW at the push of a button, BUT, we'll never actually get 1,100MW from those 22+ separate 50 turbine tower projects, and it definitely won't be on a hot summer day when the air conditioners are sucking all the juice. What does that mean ? The power industry is STILL going to need to build some fossil fuel "peaking plants" to give it the necessary capacity to back-stop the power "sometimes" available from this alternative energy source. In other words, the wind projects do not completely replace the need to build a new plant ! The difference is that the "opportunistic" energy (not the same as "capacity") which the wind would supply will most likely displace output from a modern, efficient combined cycle gas plant, and NOT from coal plants (which don't like to "cycle" up and down, or on and off.)

What is more, that modern combined cycle gas plant can be sited (note, THIS is the kind of thing we should really push for) in brownfield areas near the load centers where power is needed (further reducing need for new power lines). OR, better yet, they can be sited next to existing or soon to be retired coal plants where the transmission line infrastructure is already in place. We should look for every chance we have to encourage the retirement of old, inefficient, highly polluting, coal guzzling power plants.

Here is an example near my home in Ligonier, PA. The local power plant owner is retiring a 200MW coal plant (built in the 1920s !) and replacing it with a new "waste coal" (culm, boney piles etc.) burning plant that produces 500MW but emits less pollutants than the old plant. That new plant yields 300MW of incremental power, available 7x24, AND benefits the local watersheds by cleaning up the old boney piles which contribute to AMD. This project was successfully developed, in large part, because of the very vocal support of local environmental and watershed organizations, along with the PA Dept. of Conservation and Natural Resources. That "extra" 300 MW from this brownfield power project is like a DOZEN different wind projects of 25 turbines/25MW) ! Come on, to make real dent in our power supply needs, we would have to string these windmills from Maine to Georgia along a huge chunk of the (environmentally sensitive) Appalachian ridge top. Are you still willing to compromise our mission to "conserve," and instead support 10, 20 or more wind farms in our region if they could be completely avoided by just 1 brownfield natural gas-fired plant ? Heck, we'll need to site an inefficient gas or oil-fired peaking plant anyway, since the wind farms only produce intermittently up to their total output ratings. Personally, I wouldn't make this trade, but that's for you to decide too. I just feel people don't realize how insignificant the contribution from these invasive developments really is to our supply infrastructure.

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**Good news.** I am still just trying to learn more about the wind industry, but I like what I am hearing about the future of wind development, namely massive off-shore projects. Now we are talking! Now we have scale and “materiality”! ...not to mention a much better, consistent supply of wind, plenty of space, much less environmental impact, no view-shed impact, fewer NIMBYs (which makes the projects more economical) and fewer new transmission corridors. Imagine a single undersea cable running 10 miles back to shore and landing at an urban load pocket where power is needed. Developers could site 500, 1000 or more turbines at a good site. Several of these projects now may amount to a MATERIAL supply source. Intuitively, I feel THIS is a promising future for wind power to which we should lend our support...and that way we don't need to compromise our mission to conserve the unique, ecologically fragile and very limited highland spaces of West Virginia, and elsewhere along the Appalachian Ridge corridor.

**Note:** Some people may reasonably ask, if Appalachian wind projects aren't of sufficient scale to be economic, then why are developers pursuing them in a competitive wholesale marketplace? Great question. Remember, first of all, your tax dollars are helping to make these projects economical for developers by way of the “alternative energy” tax credits available to support wind power projects and their owners. Second, developers are betting on (or in some cases have commitments for) receiving 1.5 to 2 cent per kWh premium for the electric output of the windmills. That is because electricity retailers can convince a relatively tiny minority of environmentally conscious consumers to pay a 10-20% premium for “green” power, which includes wind power as part of its “supply mix”. Of course, the majority of these well-intentioned folks are urban dwellers and suburbanites who just buy the power, feel they are doing a good deed – which they are to some degree – but never are forced to evaluate the real trade-offs with which those of us who live and recreate along the ridges must struggle.

Finally, in selling this “green power” the retailers benefit from extremely liberal “packaging rules” which essentially further subsidize wind power and make up for its unreliable deliverability and poor daily/seasonal availability profile. In other words, the retailers are allowed to “average in” wind power on an annual basis. While they are placing some incremental demand on the supply of wind energy, buyers of green power aren't nearly sending the “one for one” sort of “Economics 101” buying signal they may think they are creating for the power production industry. They certainly aren't getting electrons from windmills most of the time ! ...those are being supplied by the fossil fuel plants which are dispatched and operated to meet the hour to hour, day to day electricity needs for a vast majority of the grid. So, no, in my opinion these projects don't stand on their own merits. That in and of its self may not make these projects “bad”, but it does mean that most well-meaning folks are making uninformed decisions about buying “green” power and perhaps in WVHC members' cases whether or not to support proposed wind projects under the assumption that they are more beneficial than they in fact really are.

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**Note 2.** Yes, I work in the power industry, (lest I am accused by some wind developer of coyly pushing an anti-wind power agenda on behalf of an employers' interest). But I am writing in my capacity as concerned WVHC member, whose only agenda is to attempt to fill in some of the info gaps, to give some perspective for making informed if not still difficult personal and/or organizational decisions. My only personal agenda here is to see WV's natural treasures conserved, as much as practically possible. (And I don't find ridge-top wind projects to be a practical solution to anything). I am not a natural gas plant developer in disguise! Gas plants, even brownfields, do have their warts. But, from a practical perspective, I feel the new breed of efficient combined cycle plants play a role in bridging our power supply for the next generation until a more renewables-based industry is technically feasible and economically viable (e.g. large off-shore wind ? fuel cells, solar etc). I see small scale (25 to 150MW) Appalachian ridge wind projects as a case of (seductive but destructive) "feel good" form over substance. But, hey, I don't want to go off on a rant here...[sarcasm!] Thanks for listening!

Sincerely,  
Ken Gfroerer, Ligonier, PA