

Seneca Wind: 18-0488-EL-BGN

Republic Wind: 17-2295-EL-BGN

Emerson Creek: 18-1607-EL-BGN

Rather than discuss the usual wind turbine related topics like setbacks, negative effects on people/wildlife, property rights, etc, I instead want to address the capacity that wind power does (or doesn't) generate.

You hear people say all the time "let's replace fossil fuel generated electricity with renewables". Let's attempt to quantify that statement.

At 12:00 pm today (Jan 31, 2019), the electricity being generated by the PJM grid is shown in the pie chart below. Of the 126,444 total megawatts generated, 46,791MW is from coal plants which equals 37% of the total. Notice that wind power only generated 858MW which is only 0.6% of the total.

If we want to replace the capacity produced by the coal plants supplying the PJM grid with wind turbines, how many turbines do we need?

Let's assume we use 2.5MW turbines and assume they are 35% efficient which is being generous. This means we would need 53,475 turbines to generate 46,791MW of electricity. If we put all those turbines in Seneca County, we would have 96.7 turbines per square mile! Even if I increase the efficiency of the turbines to 50%, we would need 37,432 turbines which would equal 67.7 turbines per square mile in Seneca County! Of course, we still need fossil fuel generators so that we have electricity available to back up renewable power, to handle peak demand periods, and when the wind doesn't blow or the sun doesn't shine.

That was only to replace the coal plants. Now triple those numbers if you want to displace gas and nuclear plants too!

I don't think the average person has any idea how unrealistic wind power is to displace fossil fuel power generation. The efficiency and rated output of wind turbines just isn't close to being enough. Keep in mind that the above example is only for the PJM grid. How many turbines would we need to cover the electrical demand for the entire country?

By the way, per the PJM stats, the best output that Wind produced was on December 27, 2018 with 7,666MW output. The average daily output is only 2,452MW which is only 1.9% of the total amount of electricity that was generated on this specific day.

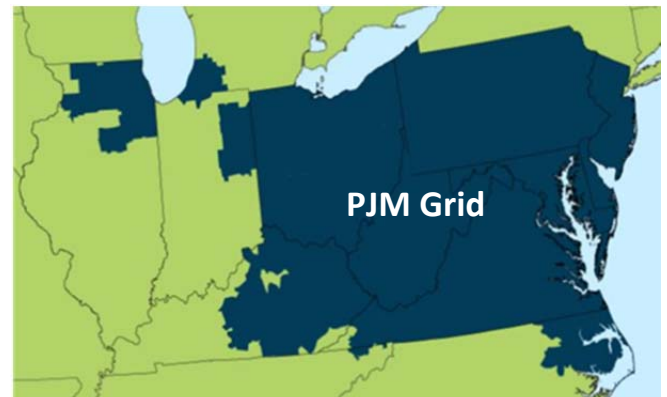
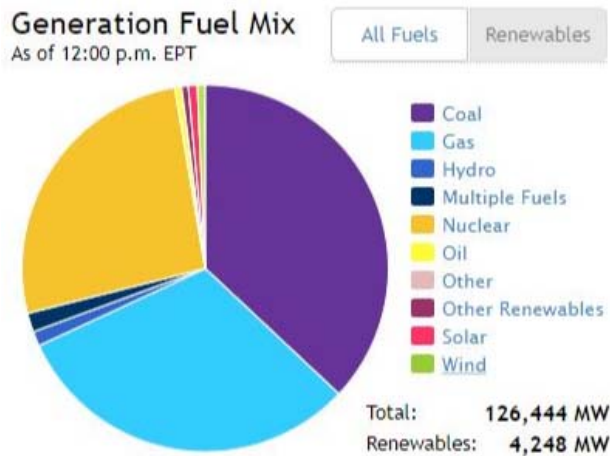
We can agree to disagree on all of the other wind related issues, but tell me where I am wrong with my capacity analysis. It seems to me the story isn't about renewable capacity or green energy at all but instead is all about money and politics.

I realize that this subject is more of an energy policy statement that extends beyond the Ohio Power Siting Board's responsibilities, however per the OPSB's mission statement the Board is to "support sound energy policies" and also considers the "need for any transmission facility" and evaluates whether the "facility will serve the public interest, convenience, and necessity".

When you consider the negative impacts of the wind turbines in addition to the fact that wind turbines don't have the efficiency or the capacity to make a meaningful impact on the use of fossil fuel electrical generation, I don't see how the Ohio Power Siting Board can support these projects.

Greg Smith

Bloomville



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