Letter to the Editor: Chowan Herald: 10/1/14

More on the Folly of Wind Turbines

The following article, written by Simon Rozendaal, appeared in a recent issue of *Elsevier*, a major weekly news magazine in the Netherlands. It deals with wind turbines of which there are already over 2000 in that small country. Mr. Rozendaal has several degrees in chemistry and is a regular contributor to the Science section of Elsevier. (The article has been translated into English by me and may vary slightly from a literal translation.)

"More and more Dutch people oppose the arrival of wind turbines. And rightly so: wind turbines are ugly, expensive, and save much less fossil fuel than is often claimed.

"The protests against wind turbines are becoming more numerous, but the government and parliament are not to be bothered by the people. In the last two years alone, there have been over a hundred foundations and advocacy groups created to protest the placement of wind turbines.

"The (leftists) government adheres to a deaf and blind policy and just goes through with the plans to have 2020 to have 6,000 megawatts of wind power by 2020.

"The opposition also has financial causes. Homeowners see the windmills the size of the Euromast (331' tall) not only ruining their views, but also reducing the value of their homes. It is incorrect to consider the protests as just a Nimby-sentiment. There are indeed many serious and valid social objections to wind turbines.

"Electricity from wind turbines is still three to four times as expensive as the generating costs of gray (fossil) and red (nuclear) power.
Citizens are making up for these costs twofold - through taxes and through their increased power bills.

"In addition, wind power has many hidden costs. There is a big difference between the time of power supply and power demand, which can eventually only be bridged with extremely expensive storage systems.

“In social terms wind energy is a disaster. Rich farming corporations with large tracts of land benefit from it by receiving huge subsidies funded by the taxpayer. The leftist German weekly Die Zeit mentioned in this regard the reverse Robin Hood effect: take money from the poor and divide it among the wealthy landowners.

“And why? The idea was that the wind turbines would be saving fossil fuels. But that is much less than one might think. Wind turbines require a backup to quickly switch to fossil fuel operated power plants in case the wind dies down. A wind turbine turns on a curious cocktail of wind, fossil fuel and subsidies.

“It is very likely that in about twenty years a report will appear from some governmental agency which will show that the construction of thousands of these monstrosities was one of the biggest and costliest mistakes of the 21st century.”

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Miscellaneous: Efficiency Varies with Wind Speed

A given wind turbine has a "design point" that generally defines it's peak efficiency at the wind speed for which the system is designed. At wind speeds above and below the design speed the efficiency is the same or less - maybe much less. If a turbine's best efficiency is 40% at a wind velocity of 9 meters per second (about 20 mph), it will be 40% only at that wind speed. At all other wind speeds it will be something worse. That wind turbine will generally operate at lower than its best efficiency, because wind speeds are never constant or average.

The electric power actually produced will be still lower because the generator efficiencies are also less than 100% (generally in the mid- or low-90's at best), and there are further losses in the conversion electronics and lines. But this is true of all power technologies. When all these losses are figured in, you might, if you are lucky, be getting 35% or so of the wind's energy actually delivered as useful electrical energy to the end user in the very best conditions. The average might only be in the twenties.

In the formula above, then, we have to add one more number that I don't show. That number is an efficiency number that would have to supplied by the manufacturer of the wind turbine, or experimentally determined by you if you make it yourself. It will not be one number, but a variable that is a function of wind speed.

Peter C. Lolkema