

Presentation to Planning Advisory Committee (PAC)

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by Judith Peach, Waterford, Digby Neck

First let me begin by saying that I believe our provincial government is irresponsible in passing down the burden of regulating wind generating plants – wind farms - to the municipal governments of Nova Scotia.

Wind plants represent a major change to our rural landscape. Before encouraging their development, our provincial government should have identified the best places to site them and a set of standards that all wind plants would need to adhere to province-wide. This would have ensured that all residents of the province would be protected equally from any potential negative effects from this type of development and that the various businesses developing the wind farms would also compete on a level playing field.

This did not happen, and each municipality is left to develop its own land use by-laws to regulate the wind industry - or not. Municipalities which perceive themselves as having fewer economic alternatives will be more likely to gamble that any negative effects from wind farms will not be noticed by their residents than municipalities with a broader, more prosperous or more resilient economic base.

However, it is very likely that it will be our municipal government that will have to respond to residents if and when they experience any problems with wind farm development – problems with the conduct of the proponent in the community, problems with lease agreements, problems with the use of public roads to bring in heavy equipment during construction, problems with noise, problems with unexpected changes in our landscape, and problems with loss of property values. These problems can be avoided through an effective and stringent by-law regulating wind farm development, but it will require the PAC and Council to do more research into potential adverse effects and it will require you to take a more precautionary approach to this development than you have demonstrated so far.

Other countries, particularly in Europe, have a lot more experience with utility scale wind power than we do. They now have quite a bit of data on some very key issues surrounding this type of renewable energy that was once thought to be the solution to our unsustainable dependence on fossil fuels to generate electricity.

To give you some idea of where Europe's thinking is now on utility scale wind energy, let me quote from a study by Tony Lodge, a political and energy analyst, of the London-based Centre for Policy Studies, called ***Wind Chill, why wind energy will not fill the UK's energy gap.***

Lodge writes that **wind energy is unreliable, expensive, inefficient and not even particularly 'green'. It is also unpopular...and its cost will help to drive more and more families into fuel poverty.**

Before you discount this assessment as the latest rant from an environmental group consisting of a bunch of NIMBYs or CAVEs, let me read you some background on this Centre for Policy Studies. **The Centre for Policy Studies was founded by Sir Keith Joseph and Margaret Thatcher in 1974 and is one of Britain's best-known and most respected centre-right policy research centres....The CPS is the champion of the small state. It believes people should be enabled and encouraged to live free and responsible lives.**

We're told that the main reason we should embrace wind farm development - often put forward by wind farm developers and their supporters - is that it will reduce greenhouse gases. According to this study, this has not happened in Denmark, where there are more turbines per capita than anywhere else in the world.

Lodge writes that **not a single conventional power plant has been closed in the period that Danish wind farms have been developed. Because of the intermittency and variability of the wind, conventional power plants have had to be kept running at full capacity to meet the actual demand for electricity and to provide back-up. Furthermore, the Danes have found that it is not practical for large baseload plants to be turned on and off as the wind dies and rises: indeed, the quick ramping up and down of those plants, ... would actually increase their output of pollution and carbon dioxide (the primary greenhouse gas). Baseload stations have to keep running so that they can 'shadow' wind turbines due to their intermittency. So when the wind is blowing perfectly for the turbines, the power they generate is usually a surplus and sold to other countries at an extremely discounted price, or the turbines are simply shut off....in 2003, for example, 84% of western Denmark's wind-generated electricity was exported (at a revenue loss). Denmark's grid accepted only 3.3% of electricity generated by its vast wind farms...the Danish grid used 50% more coal-generated electricity in 2006 than in 2005 to cover wind's failings. The increase in the demand for coal, needed to plug the gap left by underperforming wind farms, meant that Danish carbon emissions rose by 36% in 2006.**

So, in the country with the most developed wind energy system in the world, Denmark, no conventional power plants have been able to close, and Danish carbon emissions from electricity generation have actually increased.

Another issue that is hotly debated between developers and those who object to having to co-exist with the turbines, are environmental concerns – visual impact, effect on birds and bats, noise pollution, light pollution. Lodge writes that **The presence of wind turbines introduces an industrial plant to a rural area. Wind farms are generally considered to be ugly. They affect birdlife, ecology and can raise health issues. And they affect house prices and can deter tourism....**

Pictures from the energy companies show slim towers rising cleanly from the landscape or hovering faintly in the distant haze, their presence modulated by soft clouds behind them. But a 200 to 400 foot tower supporting a turbine housing the size of a bus and three 100 to 150 foot rotor blades sweeping over an acre of air at more than 100 mph requires, for a start, a large and solid foundation. On a 1.5-MW tower, the turbine housing, or nacelle, weighs over 56 tons, the blade assembly weighs over 36 tons, and the whole tower assembly totals over 163 tons. Wind farms are industrial and commercial installations....it makes no sense to tackle one environmental problem by instead creating another.

On noise, Lodge reports that Dr. Fits van den Berg, who is also referenced in the UNSM report, has recently completed a study for the European Union called *Visual and acoustic impact of wind turbine farms on residents*. **The report concluded that wind turbine noise is more annoying than other industrial noises of the same magnitude and that wind turbine noise is poorly masked by background noise....A German/Dutch study in 2003 found significant noise levels one mile away from a two year-old wind farm of (17) 1.8-MW turbines, especially at night....This report stated that: "the turbines are audible for most of the day and night and a swishing sound is readily discernible."**

Lodge admits that **New turbines do have quieter bearings and gears than earlier turbines. However, the huge magnetized generators can not avoid producing a low-frequency hum, and the problem of 100 ft rotor blades chopping through the air at over 100 mph also is insurmountable. Every time each rotor passes the tower, the compression of air produces a deep resonating thump. Only a "swishing" may be heard directly beneath the turbine, but farther away the resulting sound of several towers together has been described to be as loud as a motorcycle, like aircraft continually passing overhead, a "brick wrapped in a towel turning in a tumble drier," "as if someone was mixing cement in the sky," "like a train that never arrives." It is a relentless rumble like unceasing thunder from an approaching storm.**

The penetrating low-frequency aspect to the noise...travels much farther than the usually measured "audible" noise. You should know that the Decibel A scale is weighted to measure audible

frequencies. It's not accurate in the measurement of the disturbing low-frequency noise from large wind turbines.

Developers and regulators often insist there is no evidence that the noise and visual impacts from wind farms reduce the attractiveness of houses located nearby. Lodge disagrees. He says, **This also has huge implications for local house prices. A valuer in mid Wales has suggested a probable 25% reduction in house values caused by a proposed wind farm; estate agents estimated that proposals for three 100m wind turbines in Devon reduced the value of one particular property by a third.**

The UNSM report finds that such claims of reduced property values can't be substantiated. Would our municipality like to guarantee that homes within sight and sound of the proposed Digby Wind Park will retain their current values, relative to comparables in unaffected parts of the municipality, within a specified time period (say 1 year) after the turbines are constructed? Could the money the municipality will receive in taxes from the wind plant, \$5,500 per MW, be set aside to compensate affected residents for loss of property value if they find they can't live with the noise and wish to sell their homes within that same time period?

The by-law you're now developing should make sure that there will be no adverse effects of wind farms on existing residents – on the communities of people that exist on Digby Neck today - or at least that any negative effects are out-weighted by the positive effects the generating stations will bring to these residents' communities.

This means larger separation distances and setbacks than developers would like to see. It means listening to residents' concerns and enacting legislation to protect the rights of the entire community, not just those who will benefit financially.

Lodge states that **Planning law, in principle, addresses the relative merits of an application and the value of the development to the proposer, against the potential disadvantages and advantages to the local community. Where a balance of advantage appears clear, it is generally accepted that applications are accepted.**

But, in the case of wind applications, Government guidance on renewables targets is encouraging councils to override all other issues. Local government seems to be supporting wind farm applications irrespective of their usefulness, efficiency or practicality. The concerns of local people are often being overridden by planning officers.

As you can see, our experience in Nova Scotia is not unique. I've brought you each a copy of *Wind Chill* to read in full so you can get some idea of the other side of the story – not just the proponents' and wind energy associations' point of view.

Let me remind you that democracy is generally defined as "government of the people, for the people, and by the people". There are other names for government of, for, and by corporations and they're not flattering.

I hope that you will work hard to develop a wind by-law that will protect our health and welfare; that you will take your democratic responsibility to work "for the people" seriously.