

Wind Energy: Questions and Answers

Recently, I wrote about the dangers of smog in Caledon. This week's column answers questions I have been asked about an exciting smog-reducing project being studied in Caledon: wind power generation.

Why do we need wind power? Much of Ontario's smog and greenhouse gasses come from massive coal-burning electricity generators, the biggest air polluters in Canada. If we could generate 26% more clean energy, the coal burners could go on standby. Large turbines installed in windy locations generate the cheapest clean energy available at this time.

Do wind turbines make a lot of noise? Modern turbines are slow and quiet. Outside the nearest houses, which are usually a few hundred meters away, the sound of a wind turbine generating electricity is likely to be about the same level as noise from a flowing stream about 50-100 metres away or the noise of leaves in a gentle breeze. As the wind rises and turbines turn more quickly, ambient sounds rise as well.

What about birds? A recently published report in *Nature* confirmed that the greatest threat to bird populations is climate change. Night lighting is a far bigger concern than wind turbines. In Toronto alone, an estimated 10,000 birds die annually from colliding with buildings. Large, slow-moving wind turbines have not been shown to affect birds in any significant way. Toronto's Lakeshore turbine, despite dense seagull and goose populations, harms fewer birds than an average house cat. All wind projects require environmental assessments, which include bird studies.

Are wind turbines dangerous? Smog is far more dangerous. According to the Ontario Medical Association, smog kills 1,900 people a year in Ontario and costs our economy over \$1 billion each year. We had twenty days last year when it was risky to play or exercise outdoors due to poor air quality. Wind energy has no emissions, harmful pollutants or waste products. Turbines must be set back a safe distance from houses, according to standards developed by the Ministry of the Environment. They automatically shut down in weather where ice formation is indicated, and in other unsafe conditions.

Is there a problem with electromagnetic fields?

Testing of the CNE wind turbine shows that the magnetic field at ten feet from the wind turbine is less than that from a household hair dryer, and immeasurable from one hundred feet away. According to experts, the magnetic fields produced by wind turbines do not pose any threat whatsoever to public health.

Isn't wind power a lot more expensive than what we have now? Two recent energy cost studies found wind energy to be equal to or cheaper than coal when factoring in smog-related health care costs. Nuclear generators are cheap when running, but extremely expensive to repair - and the cost of storing radioactive waste has yet to be determined. We have all been subsidizing nuclear and coal energy.

Does building a wind turbine take more energy than it makes? The average wind turbine pays back the energy used in its manufacture within three to five months of operation.

Doesn't wind energy need backup? Wind is only part of the total power grid, and all sources act as backup for each other.

Why not put all turbines on the Great Lakes? Up to 15% of power can be lost in transmission over great distances. Concentrated large-scale wind farms only let the biggest players in on the competition. Local wind effects can result in large power fluctuations too. With a mix of large and small installations in a number of communities, there is steadier wind power overall, which leads

to a more stable, less vulnerable grid.

Does Caledon plan big wind farms? Caledon is more likely to implement several community-scale projects of three to five turbines, due to our moderate wind speeds.

There is a public meeting to discuss community wind energy on Tuesday June 14th at 7:30 pm at the Caledon Community Complex, 6215 Old Church Road, Caledon East.

For further information, you may contact us at cca@caledoncountryside.org or (905) 584-6221, or visit www.caledoncountryside.org/stepup.htm.

Dr. Richard Ehrlich
Caledon Clean Air Clean Energy