To protect the environment, the province must move away from coal-based electricity and use more renewable energy.

Regulations demand that nearly 20 per cent of all of Nova Scotia's electricity come from renewable sources by 2013. To reach that target, the number of wind turbines in the province may grow from 40 to as many as 250.

Wind in Nova Scotia

QUICK FACTS

How are wind farms regulated?

All wind projects in Nova Scotia must meet the requirements of both municipal and provincial governments.

Municipal regulation:

Wind energy projects must conform to municipal zoning bylaws. Municipalities have the authority to require minimum setbacks between the wind project and other structures.

To help municipalities, the Union of Nova Scotia Municipalities has released guidelines for zoning and siting policies based on best practices from across Canada, USA, and Europe.

Each municipality is unique, and one-size may not fit all. The guidelines serve as starting points for local policy, and municipalities can tailor them to suit the needs of their community (visit **www.unsm.ca** for more info).

Wind energy offers many advantages: emission-free, renewable, domestic, and relatively affordable. While most Nova Scotians want more green energy, some have concerns about wind in their community. This document examines some of these issues.

Provincial regulation:

The provincial government ensures a mandatory Environmental Assessment (EA) for all wind projects over two megawatts. Through the assessment process, each proposed project is dealt with on its own merits, with technical experts considering issues such as:

- number and placement of turbines,
- impacts on wildlife and local landscape,
- sound levels and other potential impacts for local residences, and
- human health.

Further details on wind project EAs are available at **www.gov.ns.ca/enla/ea/docs/EAGuideWindPower.pdf**.

NOVA SCOTIA
Department of Energy

A source of energy…

Nova Scotia has a tremendous wind resource. With some of the highest average wind speeds in Canada, a wind turbine placed in Nova Scotia can produce large amounts of cost-effective power.

Technology:

Wind energy can be converted to electricity with a wind turbine. Wind turbines use the rotational motion of the blades, sped up through a gearbox, then converted by a generator, to create electricity.

Wind turbines come in a variety of sizes. Large commercial-scale turbines can be 120 metres high, with an 80 metre tower and 40 metre blades. These turbines might produce 2 megawatts of power – enough electricity for about 600 homes. Soon, larger machines may be capable of powering 1500 homes.

Environment:

In Nova Scotia:

- 42% of total greenhouse gas emissions come from electricity use.
- 89% of electricity comes from fossil fuels.

That means the more electricity we use, the more polluting emissions we likely produce. The more emissions we release into the atmosphere, the more our climate is likely to change.

This change includes the temperature of the earth, the level of the sea, the frequency of extreme weather conditions, acid rain, and smog.

To avoid these dangerous effects, Nova Scotia must use cleaner sources of electricity. Wind is currently Nova Scotia's most viable alternative.

Effects:

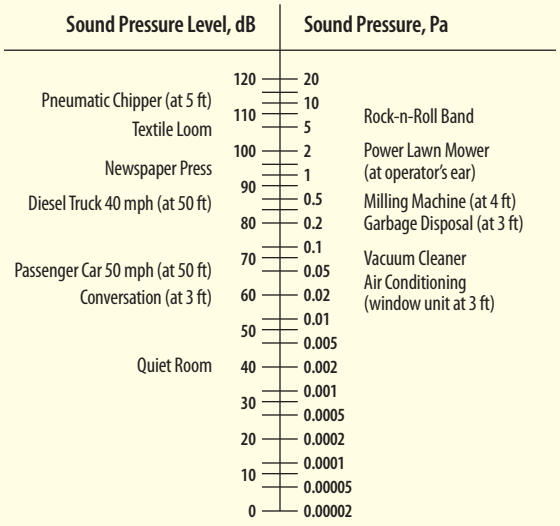
In Nova Scotia, the Environmental Assessment (EA) process evaluates any potential environmental effects from wind turbines.

The EA process includes opportunity for public comment on issues such as health, property value, wildlife, visual effects, and a commonly cited concern: noise.

Noise from wind turbines is influenced by a number of things, such as wind speed, technology, topography, weather conditions, and distance.

With today's technology, at a distance of 400-500 metres, a wind farm typically operates at a noise level of 35 decibels (dB) or lower inside the house, comparable to the sounds in a bedroom at night.

COMPARISON OF SOUND PRESSURE LEVEL AND SOUND PRESSURE



Source: Canadian Centre for Occupational Health and Safety

For more information on wind energy, facts, and links, visit **www.gov.ns.ca/energy**