

SETTING
THE

RECORD STRAIGHT

for all the electricity
users of Ontario

OPA

Ontario Power Authority

Since 2005, the electricity users of Northern York Region have been asking many questions about how their future electricity needs will be met. The Ontario Power Authority (OPA) is pleased to provide these electricity users, and all the electricity users of Ontario, with the answers to the most critical questions we've heard. This communication is the second in a series of two.

Why does Northern York Region need additional electricity supply and how much is needed? Who says so much more electricity is needed? Why is generation being proposed rather than transmission or conservation? What is the right size of the facilities? And more.

So, if new generation is needed, what kind of generation is best?

The province-wide plan to provide an adequate, reliable supply of electricity for the next 20 years relies first on conservation – the wise use of energy by industry, businesses and residents. Today's coal-fired generation will be replaced by more renewables, smart use of natural gas for specific needs, and continued reliance on nuclear for base load.

Some people would love to see **wind** power used for Northern York Region but the problem with wind as a reliable source is twofold:

First, wind generally does not flow on a hot sultry summer day when power is needed most. Thus, many turbines, as high as 160 feet, would be needed to help ensure power availability.

Each wind turbine today generates about 1.5 MWs so even if only 30 MWs were needed, at least 20 turbines – all working at once – would be necessary to achieve 30 MWs. Since wind power is reliable only about 20 per cent of the time (generally blowing approximately 20 percent of the time) it would take about 100 turbines to generate enough MWs and with each turbine taking up about 2.5 acres, at least 250 acres or more would be needed. Since Northern York Region needs more power for security, even more turbines and more land would be needed.

While there are other power sources available, they are not suitable to Northern York Region.

Water power, for example, requires adequate water sources. However Northern York Region does not have enough rivers to supply enough power.

Biogas generation is a source of potential electricity. However its effectiveness in a stand-alone application is questionable using today's technology.

Solar power, in some limited remote applications, may be appropriate. However solar technology is currently very costly, is not reliable when the sun doesn't shine for prolonged periods and requires even more land than wind to provide the power required.

Nonetheless, Ontario's long term plan is to ensure a reasonable, cost-effective mix of wind, new hydro, biogas and solar power to meet the province's electricity needs.

Natural gas. Natural gas has many benefits as a fuel for power generation. Natural gas-fired generating facilities are reliable and flexible and can operate when the electrical system requires additional supply on short notice. These characteristics make natural gas-fired facilities ideal and vital components of the system.

But why use natural gas when it has carbon in it and is so expensive?

Ontario plans to shut down all of its coal-fired plants by 2014 as natural gas is much cleaner burning than coal, which has been used for years in Ontario to produce some 8000MWs of electricity every day. Natural gas will also be used sparingly – this gas plant is estimated to operate less than 10 percent of the time.