

# Wind energy benefits you.



Environmentally and economically sound, free from the increasing cost of fossil fuels, wind has a lot to offer Canadians. Wind farms can be built quickly – faster than many other types of power plants – and can meet our growing need for electricity in cities, towns and rural areas.

With wind energy, the cost of electricity is predictable because there are no escalating fuel costs. Investing in wind also helps us offset our use of other precious resources. That's why wind energy is a great choice for today and tomorrow.



*“As fossil fuels become scarce, their price can only increase. Wind energy costs are stable because fuel isn't part of the equation.”*

**Natural gas – a rapidly depleting, non-renewable resource – is being used more and more to generate electricity, even though it's better suited for other uses such as home heating and cooking. Increasing demand for natural gas has helped drive prices up 400% in the last 5 years.<sup>2</sup>**

**Studies have consistently shown that increased use of wind energy will actually result in lower prices to consumers for natural gas<sup>3</sup> – and help conserve that resource for future generations in the process.**

## Making the connection.

### Energy without fuel.

Unlike many forms of conventional energy, which are susceptible to the increasing cost of fuel, wind energy relies on no fuel at all. Think about it. The only thing that fuels a wind farm is the wind – free and limitless.

This means that once a wind farm project is built, the price of electricity is set and it stays at that price for the lifespan of the wind turbines – approximately 20-30 years. Of course the wind is limitless and will outlast the lifespan of the turbines themselves. When they are decommissioned, newer and more efficient models of wind turbines may take their place, ensuring our ability to harvest this clean and fuel-free resource well into the future.

### Conserving natural gas.

Our supply of natural gas is increasingly limited and, despite rising prices, drilling for gas is challenged to keep pace with demand and more and more of Canada's natural gas resources are located in environmentally sensitive and protected areas.

The increased use of natural gas for the production of electricity is one of the major reasons supply is tightening. But natural gas is not as efficient in creating electricity<sup>1</sup> as it is in heating homes or providing fuel for stoves and other activities. So why not put this precious resource to better use or save it for generations to come? Wind energy can help. More wind energy coming on line will alleviate some of the pressures on natural gas.





## Wind fits with today's use of energy.

Wind farms can be built to a variety of scales. Smaller scale projects provide Canadians with the opportunity to have a diverse and well-distributed power supply. Compare that to other forms of electricity that are generated in large scale power plants. The chance of brown or black outs increases when we depend on a single large power plant. Having many smaller power producers on line is an ideal way to reduce this risk.

Another benefit of distributed energy is the ability to locate a wind farm close to transmission lines that aren't being used to full capacity. Transmission lines represent a major investment in infrastructure, so it's wise to use them as efficiently as possible. Electricity also loses power when it travels long distances, so the ability to locate wind farms closer to areas of demand is an additional benefit. Energy is precious; we don't want to waste it.

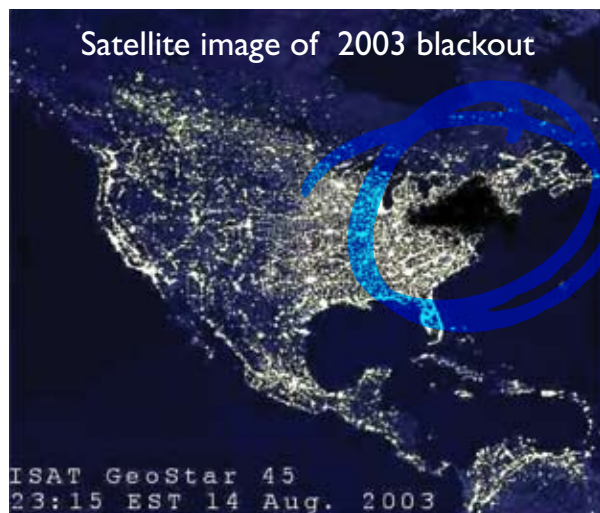
## Energy when we need it.

In Canada, we are most dependent on energy in the winter months, when it's cold. Luckily for us, the wind also blows hardest in these cold winter months meaning that wind energy production hits its peak just as our critical demand for energy does. Just another way wind energy can be there for us when we need it most.

**Cold winter winds are also denser than winds in warmer seasons. Denser winds contain more energy, so provide even more power potential when we need it most.**



**Think of throwing a hardball or a whiffle ball as hard as you can. The dense hardball travels much farther because it has more kinetic energy.**



Satellite image of 2003 blackout

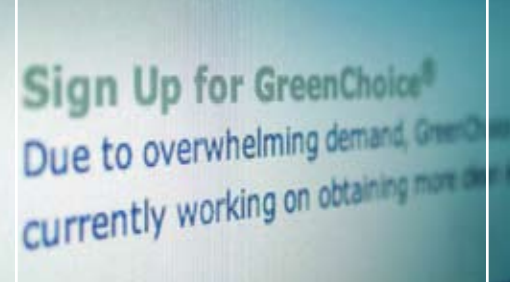
**The "cascading failures" of the August 14, 2003 blackout affected a 9,300 square mile area and 50 million people. It took just 3 minutes to shut down 21 power plants.**

**Several nuclear plants were not restarted for days, due to the extensive and time-consuming restart procedures they must go through to ensure safe operation.**

**In contrast, wind plants were able to start up nearly immediately after the safety of the grid was assured.<sup>5</sup>**

## Austin Energy

GreenChoice<sup>®</sup> program is a huge success with consumers<sup>4</sup>



**When Austin Energy**, the publicly owned utility in Austin Texas, launched their GreenChoice<sup>®</sup> program in 2000, customers had the option of purchasing green power at a premium price – but a price that is now guaranteed to remain stable through June 30, 2015. Their decision to opt for long-term stability paid off in the fall of 2005, when escalating natural gas prices pushed Austin Energy's conventional electricity costs higher than their GreenChoice<sup>®</sup> power pricing.

**Long-term, fixed price contracts** for green energy were negotiated with power producers that include the wind farms in McCamey and Sweetwater Texas. Austin Energy purchases 100% of the electricity produced by these 120 turbines – enough to power 35,000 Austin homes. Austin Energy, in turn, provides power at a fixed price to more than 7,000 retail customers and over 400 corporate customers – saving them about US \$670,000 annually.

**Due to an overwhelming demand**, Austin Energy's GreenChoice<sup>®</sup> program is now fully subscribed leaving the utility searching for more clean energy for waiting customers.

**Canadian utilities** are following Austin's example. For a list of companies across Canada that sell green power we invite you to visit:

[www.canwea.ca/en/GreenPower.html](http://www.canwea.ca/en/GreenPower.html)



**Canadian Wind Energy Association**  
Powering Canada's future naturally

Toll Free: 1.800.922.6932  
T: 613.234.8716 / F: 613.234.5642  
[www.canwea.ca](http://www.canwea.ca)



Natural Resources Canada  
Ressources naturelles Canada

CanWEA acknowledges the contribution of Natural Resources Canada.

1: Source: [http://www.naturalgas.org/overview/uses\\_electrical.asp](http://www.naturalgas.org/overview/uses_electrical.asp)  
2: Source: Canadian Association of Petroleum Producers  
3: Easing the Natural Gas Crisis: Reducing Natural Gas Prices through Increased Deployment of Renewable Energy and Energy Efficiency, Wisser & Bolinger  
4: Source: Austin Energy (<http://www.austinenenergy.com>)  
5: Source: National Association of State PIRGs