Think gas is expensive now? Just wait. You've heard it before, but this time it's for real; We're at the beginning of the end of cheap oil.
Global Electricity Production

A Coal 38.7%
B Natural Gas 18.3%
C Oil 7.5%
D Hydro 16.6%
E Nuclear 17.1%
F Other* 1.8%

* includes geothermal, solar, wind, renewables and wastes.

Source of data: International Energy Agency’s Key World Energy Statistics 2002
www.iea.org/statist/index.htm

Sept ’05

www.greenparty.ca
Japanese Energy Efficiency Improvements
Steel Production Energy Efficiency (1987)

Note: Japan = 100

Sept '05
Primary Energy: GDP in ($US M)
Lost over 230,000 steel jobs by 1998
20,000 jobs
$10B Export

Sept ’05
Average price of US Electricity

$ per kWh (1990 prices)
World Domestic Electricity Prices

Note: Prices in UK pence/kWh

Pence per kWh*, including local taxes and VAT, from a representative utility in each country for a customer on domestic standard tariff using 3,300 kWh/year, as at 1 January 2000.

*(1): 1999 data.
*(2): 1997 data.

Sept ’05 www.greenparty.ca
World Domestic Electricity Prices

Note: Japan is the highest

While Canada is one of the lowest

Pence per kWh*, including local taxes and VAT, from a representative utility in each country for a customer on domestic standard tariff using 3,300 kWh/year, as at 1 January 2000.

Note: Prices in UK pence/kWh

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www.greenparty.ca
World Industrial Electricity Prices

Note: Prices in UK pence/kWh

Sept '05

www.greenparty.ca
World Industrial Electricity Prices

Note: Prices in UK pence/kWh

Note Japan is the highest
While Canada is one of the lowest

* Converted using 30 December 1999 exchange rates.

(1): 1999 data.
(3): Electricity Association estimate.
(4): 1997 data.
NA Residential Electricity Prices

Source: CD Howe Institute, March 16, 2005

Raising Electricity Prices in Quebec & Everyone Benefits

Note: Prices in ¢Cdn/kWh
## NA Electricity Prices

<table>
<thead>
<tr>
<th>$C/kWh</th>
<th>Residential 1K kWh</th>
<th>Med. Users 1-400K kWh</th>
<th>Heavy Users 50-30,600K kWh</th>
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<tbody>
<tr>
<td><strong>May 1, 2000</strong></td>
<td></td>
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<tr>
<td><strong>Canadian</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Winnipeg</td>
<td>5.89</td>
<td>4.44</td>
<td>2.96</td>
</tr>
<tr>
<td>Montreal</td>
<td>6.03</td>
<td>6.10</td>
<td>3.83</td>
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<tr>
<td>Vancouver</td>
<td>6.12</td>
<td>4.56</td>
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<tr>
<td>Ottawa</td>
<td>7.36</td>
<td>6.88</td>
<td>5.78</td>
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<tr>
<td>Edmonton*</td>
<td>7.51</td>
<td>5.81</td>
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<tr>
<td>Toronto**</td>
<td>8.32</td>
<td>7.31</td>
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<td>St. John’s</td>
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<td>Regina</td>
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<td>Moncton</td>
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<td>Charlottetown</td>
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<td><strong>U.S.</strong></td>
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<tr>
<td>New York</td>
<td>21.24</td>
<td>17.52</td>
<td>12.63</td>
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<tr>
<td>San Francisco</td>
<td>17.18</td>
<td>12.76</td>
<td>7.33</td>
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<tr>
<td><strong>Average</strong></td>
<td>10.30</td>
<td>8.34</td>
<td>6.00</td>
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</table>

Source: Canadian Centre for Policy Alternatives July 2002
### NA Electricity Prices

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</tbody>
</table>

Source: Canadian Centre for Policy Alternatives July 2002

Sept ’05 www.greenparty.ca
Toe = ton of oil equivalent

PPP = purchasing power parity
<table>
<thead>
<tr>
<th>State/Province</th>
<th>GDP per kWh</th>
</tr>
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<tbody>
<tr>
<td>New York</td>
<td>$7.65</td>
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<tr>
<td>California</td>
<td>$9.79</td>
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<tr>
<td>Massachusetts</td>
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<td>New Jersey</td>
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<tr>
<td>Pennsylvania</td>
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<td>Florida</td>
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<td>Illinois</td>
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<td>North Carolina</td>
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<td>Virginia</td>
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<td>Ontario</td>
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<td>Indiana</td>
<td>$2.19</td>
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<tr>
<td>Quebec</td>
<td>$1.52</td>
</tr>
</tbody>
</table>

Source: Increasing Productivity & Moving Towards a Renewable Electricity Future, Ontario Clean Air Alliance 2005
Cost to Manitoba per year:

$1B
Federal Transfer Payments

$1.6B

Sept ’05
Ontario

Cost per kilowatt hour (1998)

Average cost: 5.11 ¢

- Water power: 1.098 ¢
- Fossil power: 4.293 ¢
- Nuclear: 7.721 ¢
Nuclear Load Reliability

*IEA data based on year-end capacity
Do we use electricity wastefully?
Negawatts Strategy

Sept '05 www.greenparty.ca
Power plant losses 70%
Transmission and distribution losses 9%
Motor losses 10%
Drivetrain losses 2%
Pump losses 25%
Throttle losses 33%
Pipe losses 20%
9.5 units of energy output

Fuel input = 100

Sept '05

www.greenparty.ca
Lighting accounts for 19% of US electricity & costs consumers $40 B/year. This can easily be cut in half.
If every US family replaced just one “heat bulb” with a compact fluorescent, the US would reduce CO₂ emissions by over 90 billion pounds/yr – equivalent to taking 7.5 M cars off the road.

Union of Concerned Scientists
$7.8B/yr

The Illness Costs of Air Pollution in Ontario

Sept ’05

www.greenparty.ca
A compact fluorescent equal to a 100W bulb eliminates 533 lbs of coal being burned.
$20 \times 10,660 \text{ lbs of coal}$

Sept '05

www.greenparty.ca
94% of the problems in organizations are due to bad systems and structures – not bad people.

W. Edwards Deming

Sept '05

www.greenparty.ca
Every organization is perfectly aligned to get the results it gets!
Insanity is doing the same thing over and over again & expecting different results!!
With 5% of the world's population North Americans consume 33% of the world's resources. If everyone on earth consumed as much as we do, we’d need another 3 planets to provide for the material and energy intensity. Clearly our path is unsustainable.
Trend in global average surface temperature

Source: School of environmental sciences, climatic research unit, university of East Anglia, Norwich, United Kingdom, 1999.
Climate Change is a “Top Topic” at Swiss Re

- **Property and casualty insurance**
  - Flooding - due to change of weather patterns;
  - *frequency and severity of floods and storms*
  - Worldwide economic losses due to natural disasters are doubling every decade and by 2012 will reach $150bn
    » Source UNEP Financial Initiatives Climate Working Group Report 2002

- **Life and health insurance**
  - Change in tropical disease vectors
  - Mortality rate changes (ie increase of respiratory diseases)
Climate Change is Hot Topic at Swiss Re

Figure TS-5: The costs of catastrophic weather events have exhibited a rapid upward trend in recent decades. Yearly economic losses from large events increased 10.3-fold from US$4 billion yr⁻¹ in the 1950s to US$40 billion yr⁻¹ in the 1990s (all in 1999 US$). The insured portion of these losses rose from a negligible level to US$9.2 billion annually during the same period, and the ratio of premiums to catastrophe losses fell by two-thirds. Notably, costs are larger by a factor of 2 when losses from ordinary, noncatastrophic weather-related events are included. The numbers generally include “captive” self-insurers but not the less-formal types of self-insurance.