

Electricity Future: Not Gas, Nuclear or Hydro

Presentation to CAMPUT
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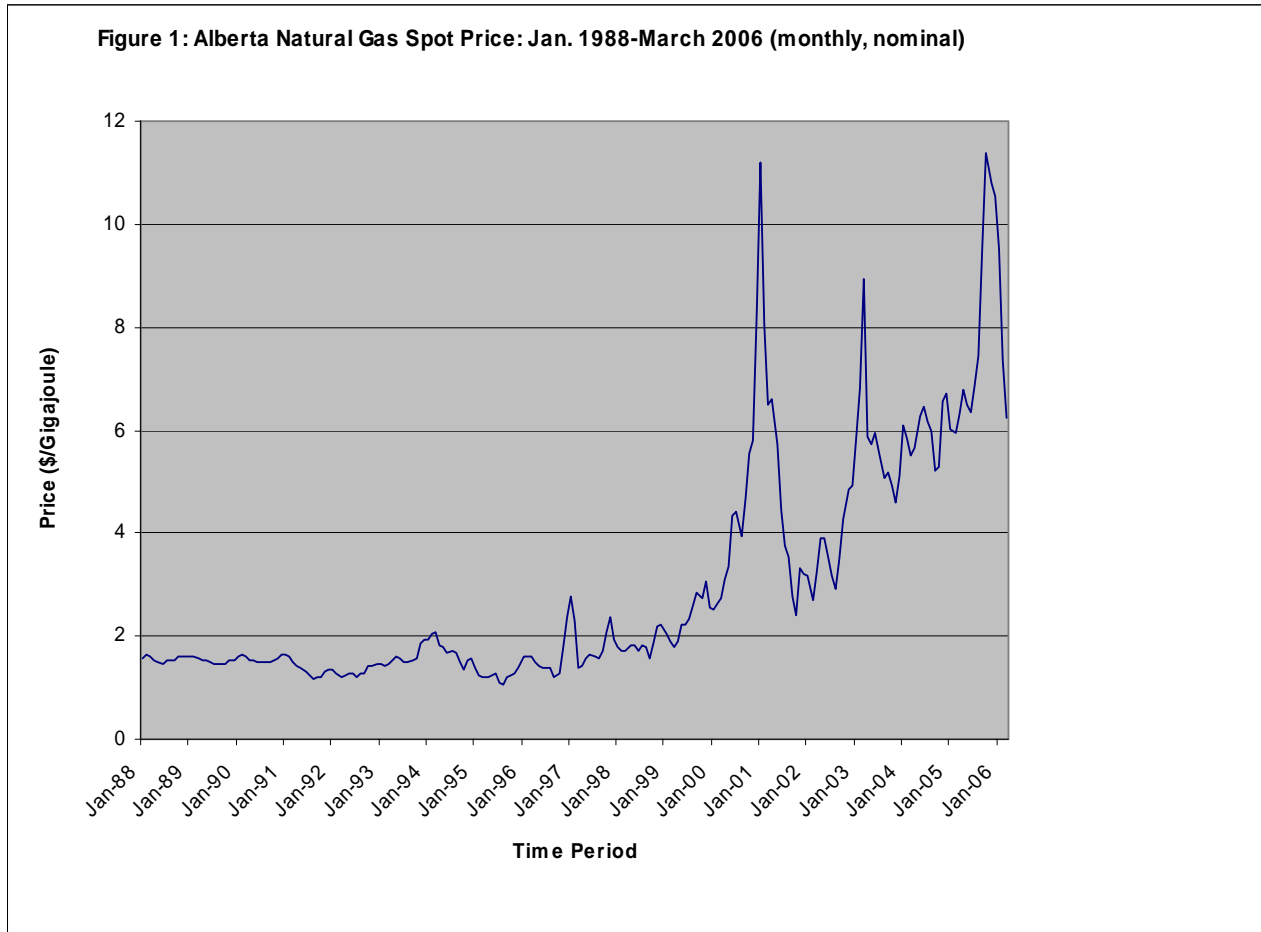
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What is Energy Probe?

- Consumer-based national public interest and environmental research organization
- Independent of government, business and unions
- Broad public interest perspective focused on promoting economic efficiency in resource use and conservation
- Active for more than 35 years

Gas-fired Generation: Uneconomic



Gas Power: No Future

- U.S. is retreating from gas-fired power
 - Gas generators sell at a discount
 - Gas power may have peaked in 2005
 - Gas power in January and February 2006 lowest since at least 2001*

*<http://tonto.eia.doe.gov/dnav/ng/hist/n3045us2m.htm>

LNG No Solution

- LNG appears to be almost as GHG intensive as coal*
- Likelihood of accidents interrupting supply (e.g. Algeria January 2004)
- Special hazards (e.g. Cleveland 1944)
- Militarized security required
- International competition is intense (U.S. LNG imports in 2005 < 2004 notwithstanding higher demand and price)

*<http://www.netl.doe.gov/otiic/pubs/sardenia%2005%20text%20Rev%204.pdf>

Nuclear Power: Uneconomic

- Only reactor under construction in Europe/NA: Olkiluoto-3*
 - 9 months behind schedule 15 months after getting construction license
- Advanced Candu design far off
 - U.S. and China abandoned Candu modernization in 2005

* France ordered one reactor last month (Flamanville-3)

Nuclear Economics: Play of the Month

- “If they end up with a lot of [long-term] nuclear contracts . . . then what we would look to come into this market would be a similar type of contract.”

*April 28, 2006, Globe and Mail, “TransAlta sets sights on Ontario: Province's nuclear interest attracts utility”

AECL Subsidies (1953-2005)

- AECL's contribution to the Federal debt: \$74.9 B or 12% of total (NPV using federal borrowing rates)*
- Liberal subsidies: \$4.3 million/day
- Conservative subsidies: \$2.6 million/day

* "Federal Subsidies to Atomic Energy of Canada Limited", Energy Probe, January 11, 2006

Ontario Hydropower Imports: Uneconomic

- Quebec's new build: ~10 ¢/kWh
- Manitoba new build (Conawapa) and Labrador (Lower Churchill) equidistantly remote from Toronto
- Harper government appears to be respecting constitutional division of powers i.e. feds out of provincial power problems

Future: Clean Coal

- Proven, advanced technologies available fast on turnkey basis
- CO₂ equality with gas realistic, acid gas nearly eliminated, some Hg control achieved
- Cost of new supply: ~6 ¢/kWh (stable)
- Downtown coal is distributed generation
- Dispatchable coal + intermittent renewables = reliable, emission controlled, reasonable cost power