

Canadian Nuclear Society Alberta Branch



Alberta Royalty Review Presentation

June 20, 2007, 2:00 PM
Medicine Hat College (Crowfoot Room)
99 College Drive SE, Medicine Hat, AB, T1A 3Y6

by

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Who are we?



- **Canadian Nuclear Society**
 - Professional scientists, engineers and technicians
 - Member Society – Engineering Institute of Canada
 - 1100 CNS members across Canada
 - Established 1979 – Federal non-profit organization
- **Alberta Branch**
 - Established 2007
 - Encourage education in, and knowledge about, nuclear science and technology



Why are we here?

- Panel Goal - Albertans get a fair share from energy development
- Nuclear energy expands the resource and releases fossil resources for other use
- Albertans and industry can share a bigger energy pie

Fundamental royalty basis



- Energy, minerals, land, agriculture, forestry
- Integrated royalty policies
- Cover all resources over time
- Develop policy for sustainability

A royalty plan for the long term



- Establish small permanent commissions to oversee resource sectors
- Overview integrating commission
- Develop “Resource Sustainability Fund”
- Some more details are provided as part of the CNS written submission

Moving toward the plan



- Need to develop synergy
- Benefit all stakeholders
- Identify and encourage improved processes
- Phase in changes slowly
- Stir industry toward long term benefits for all Albertans

Current processes to question

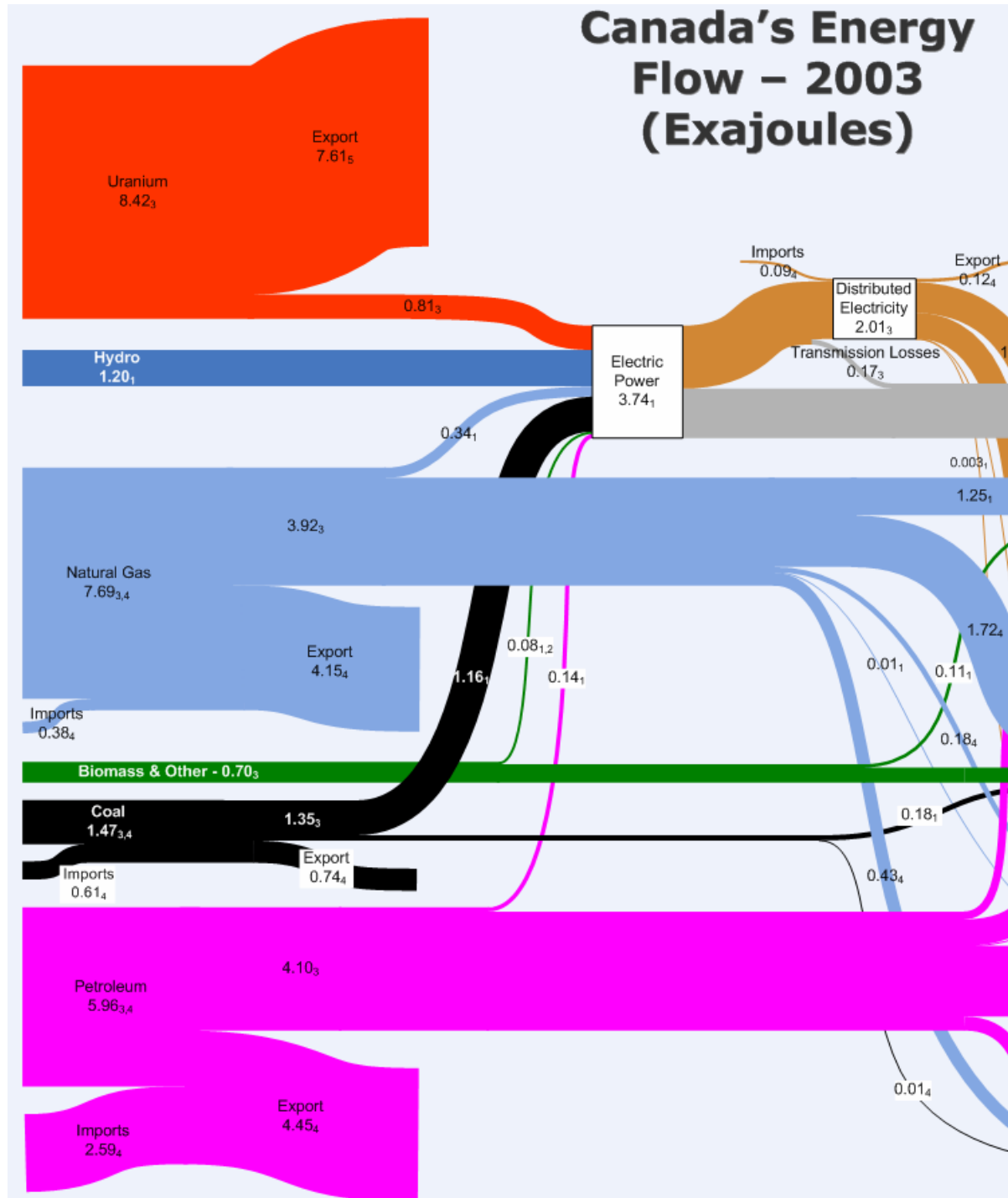
- Under priced natural gas for industry?
- Resource wasted by coking?
- Hydrogen added a better way?
- Under valued synthetic gas?
- Bitumen wasted by burning?
- Bitumen and added value exported?
- Are some of these hidden subsidies?
- How is capital recovery calculated?



Stretching depleting resources



- Could nuclear energy help?
 - Conserve natural gas
 - Conserve bitumen - hydrogen upgrading
 - Increase oil and gas total production
 - Carbon dioxide – reduce emissions
 - Reduce pollution
 - Start a transition to alternate energy
 - Preserve a long term energy royalty base



Part of Figure from;
Campbell, Graham, "Energy Science and Technology Strategy", NRCAN, EIC Climate Change Technology Conference, Ottawa Congress Centre, May 10 - 12, 2006 - Ottawa, Ontario, Canada

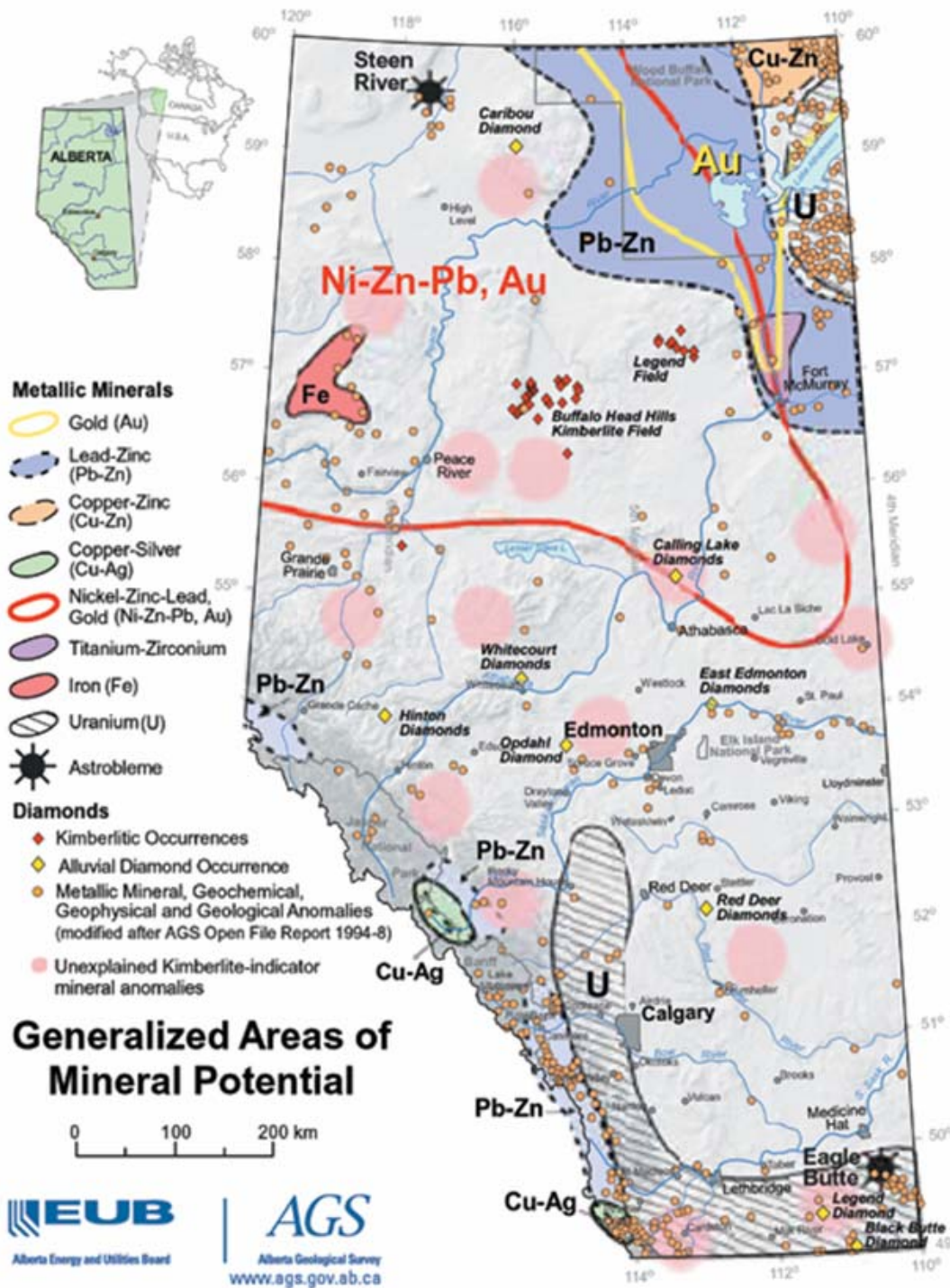
[Complete High Resolution Image](#)

Figure based on amount of energy extracted from natural uranium by CANDU reactors. Potential energy from uranium using fast (breeder type) reactors is about **100 times** that shown

Saskatchewan
Uranium Royalties
about \$50 million
annually

Alberta Oil Royalties
about \$10 billion
annually

Could Alberta and
Saskatchewan
develop energy based
royalties for uranium?



Athabasca Region - 2007



Athabasca oil sands,
north of Fort McMurray.

Photo by Nancy Groce,
Smithsonian Institution

[http://newsdesk.si.edu/p
hotos/cfch_alberta.htm](http://newsdesk.si.edu/photos/cfch_alberta.htm)

Athabasca Region 2100



Sky

Power line

Sun

Canola

Supplementary - Bibliography



- Donnelly, J.K. and D.R. Pendergast, "Nuclear Energy in Industry: Application to Oil Production", Climate Change and Energy Options Symposium, Canadian Nuclear Society, Ottawa, Canada, November 17-19, 1999 <http://www.cns-snc.ca/events/CCEO/nuclearenergyindustry.pdf>
- Dunbar, R.B. and T.W. Sloan, "Does Nuclear Energy Have a Role in the Development of Canada's Oil Sands?", 2003. http://www.ceri.ca/docs/2003_096.pdf
- Voutsinos, C. "GETTING THE MOST OUT OF ALBERTA'S TAR SANDS" Forthcoming book, Preliminary version posted on the internet, <http://www.computare.org/guests.htm>

Supplementary - Resumes



- Presenter resumes provided in notes page below