

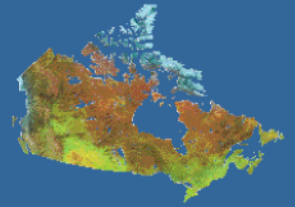
Bioenergy's Position in the Regional and National Energy Policies of Canada IEA Task 29 Meeting

Dr. Bill White

Canadian Forest Service

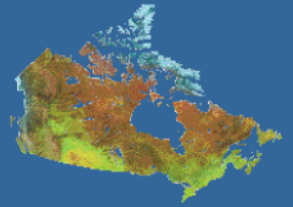
Hadeland, Norway June 18, 2010





Canadian situation

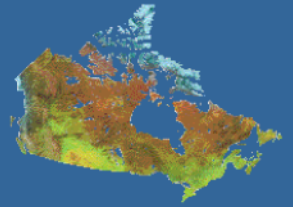
- Energy use by source
 - Petroleum 39%
 - Natural Gas 28%
 - Coal 13%
 - Hydro 11%
 - Biomass 6%
 - Nuclear 3%



Renewables

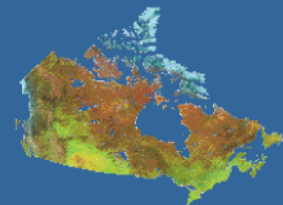
- Hydro 68 %
- Biomass 28%
- Wind 2%

- National Incentives
 - 8.3 Eurocents/l for ethanol in gasoline
 - 16.6 Eurocents/l for biodiesel
- 5% ethanol requirement in gasoline for 2010



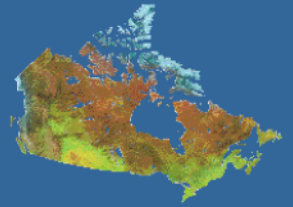
Renewables (cont.)

- Also Provincial incentives
 - 3 provinces mandating ethanol use, a fourth is considering same
 - Primarily tax reductions
 - Some producer incentives



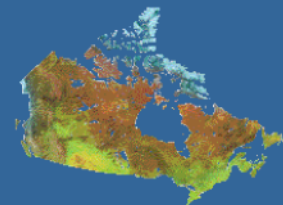
Biomass support

- Less support to biomass heat and power
 - “lean and ineffective”
 - Basic research, applied R&D, demonstration, pre-commercialisation
 - Provinces doing more to encourage projects
 - BC- 10 Community energy projects by 2020
 - Invitation for proposals to supply power to the grid
 - Supporting forest industry



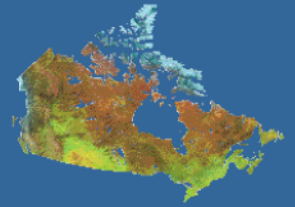
Regional Picture

- In Canada, the provinces have the constitutional authority to manage natural resources and are the largest landowners.
 - Over 90% ownership in most provinces
 - Could look at 10 regions but we will focus on two provinces that have taken diverse approaches and are considered leaders in bioenergy



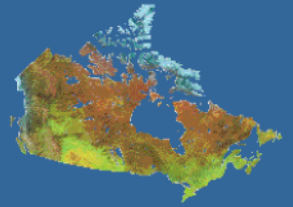
Ontario

- Generous feed-in tariffs
 - Biomass 11-16 eurocents/kwh
 - Varies with size of project, on-farm etc.
 - Solar 35-65 eurocents/kwh
 - Wind 10-16 eurocents/kwh
 - Ontario Hydro sells to the public at 7.2 eurocents/kwh
- Goal of the program is to increase the amount of clean energy on the grid.



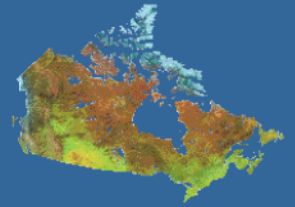
Ontario

- Given the current feed-in rates and sales price what two things would you expect to happen?
 - High program uptake
 - 6.4 billion Euros in new projects
 - Thousands of applications under review
 - Higher rates for consumers
 - 25% increase expected
 - Critics argue the feed-in tariffs are too generous and will result in a sub-optimal energy mix



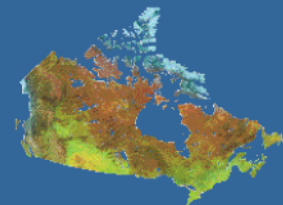
British Columbia

- The BC Bioenergy Strategy includes:
- \$25 million in funding to establish a Bioenergy Network.
- Up to \$10 million over three years for biodiesel production.
- A goal of meeting 50 per cent or more of B.C.'s renewable fuel requirements by 2020 with biofuels produced in B.C.



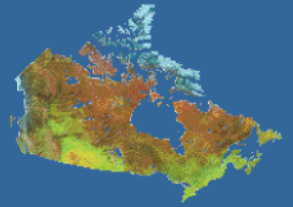
British Columbia

- A goal of establishing at least 10 community energy projects that convert local biomass into energy by 2020.
- The establishment of one of Canada's most comprehensive provincial biomass inventories that creates waste-to-energy opportunities.



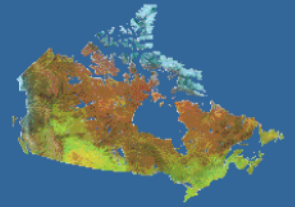
British Columbia

- Issuing a two-part Bioenergy Call for Power focusing on existing biomass inventory in the forest industry and offering opportunities for smaller energy producers with projects that are immediately viable
- Unspecified feed-in tariffs for emerging technologies such as energy from the ocean



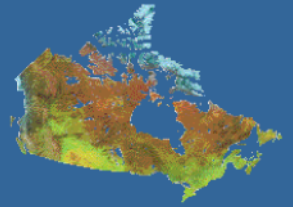
Assessment

- Analysts believe Ontario has the advantage in moving forward with green energy because of the generous feed-in tariffs.
 - Many believe these are overly generous



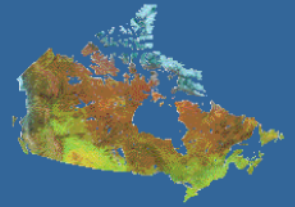
Outlook for Bioenergy Use in Canada

- There is a lot of interest. Provinces in particular are encouraging increased use.
- Barriers
 - Extraction of fossil fuels is a huge industry in Canada.
 - Key export industry
 - Essentially fossil fuel self-sufficient. Security of supply not an issue
 - Significant low-cost hydro electric generation.
 - Difficult to build large new dams.



Outlook

- District heating, pellet stoves etc. are a new technology and therefore not a common choice.



“Perfect Bioenergy Politician”

- Local politicians have the greatest opportunity for influence. The perfect one would:
 - Set an example
 - Push for local projects
 - Be source of information
 - “On the ground” not at a place distant from where projects take place
- National and provincial/regional politicians can create frameworks that encourage local uptake of bioenergy.

