Transitioning to Lower Carbon Energy Use: British Columbia Policies, Prices, Economy and Technologies

Standing Senate Committee on Energy, the Environment & Natural Resources

October 3, 2016

Comité sénatorial permanent de l’énergie, de l’environnement et des ressources naturelles
History: Energy and Environment

- 2002 Energy Plan: incremental supply from IPPs, efficiency
- 2007 Energy Plan: energy efficiency 50% of incremental supply
- Carbon Tax: $10/MT---$30/MT
- 2008 Climate Action Plan
- *Greenhouse Gas Reduction (Renewable and Low Carbon Fuel Requirements) Act*
- LiveSmartBC (home energy retrofit), DSM Regulation
- 2010 *Clean Energy Act*
- S18 Greenhouse Gas Reduction Regulation
- Innovative Clean Energy Fund
Climate Action Progress

• 2014 GHG emissions were 62.7 million tonnes CO$_2$e, 5.5% below 2007, while:
  – population has grown 8.1%
  – GDP has grown 12.4%

• B.C.’s emissions per capita and per unit GDP are well below national average and dropping
Tools for Transformation

- Taxation – Carbon tax, PST exemptions
- Regulation – codes and standards
- New infrastructure – EVs and charging infrastructure
- Lower carbon intensity inputs into existing infrastructure – fuel switching
- Incentives to change behaviour – EV purchase incentives

**British Columbia is using all of these tools**
Energy Use is Changing

- 98% clean or renewable electricity
- 6.7% ethanol in gasoline
- 5.2% biodiesel/HDRD in diesel
- Largest fleet of HDV using natural gas, including ferries and marine vessels.
- Clean Energy Vehicle Program
- DSM programs
  - Low income programs
  - Thermal mechanical pulping sector
Climate Leadership Plan Vision

- 2016 Climate Leadership Plan designed to keep BC on the path to 2050.
- BC’s 2050 greenhouse gas target continues to be 80% below 2007 levels.
- Policies announced August 15, 2016 will achieve up to 25 Mt CO$_2$e of the 2050 target.
- BC’s Revenue Neutral Carbon Tax remains the highest effective carbon price in North America
- A Pan-Canadian Framework will shape further action in BC over the coming year.
21 new actions across every sector and across the Province:

<table>
<thead>
<tr>
<th>Sector</th>
<th>Forecasted Reductions (Mt CO₂e in 2050)</th>
<th>Job Creation</th>
<th>Economic Activity ($M)</th>
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<tbody>
<tr>
<td>Natural Gas</td>
<td>5</td>
<td>4,043</td>
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<tr>
<td>Transportation</td>
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<td>Agriculture &amp; Forestry</td>
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Climate Leadership Plan - Non-transportation Actions

- Methane reduction for upstream oil and gas, including electrification
- Carbon Capture and Storage
- Forest Carbon Initiative
- Nutrient Management program to reduce fertilizer use
- 100% clean electricity
- Efficient electrification and fuel switching
- Energy efficient boilers, gas equipment, heat pumps
- Net zero buildings
- Waste to Resource strategy
- Low carbon building materials
- Public Sector emissions reductions
Climate Leadership Plan - Transportation Actions

- Expand low carbon fuel standard
- Natural gas heavy duty vehicles, ferries and buses
- LNG bunkering hub
- Renewable natural gas
- Clean Energy Vehicle program
- Vehicle charging and fuelling infrastructure
- Optimizing Canada’s Pacific Gateway
- Rapid transit
Next Steps: Federal Partners

- Federal government has signaled reinvigorated commitment to climate action
- Pan-Canadian Framework on Clean Growth and Climate Change
  - Clean Technology, Innovation and Jobs
  - Carbon Pricing Mechanisms
  - Specific Mitigation Opportunities
  - Adaptation and Climate Resilience Energy Vehicle program