



# **Existing Canadian Climate Change Legislation and a Possible Federal Approach**

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# Climate Change Legislation

- Climate change legislation is very topical at this time, with pending federal legislation in development to comply with Canada's commitments under the Paris accord.
- Various provinces already have legislation in place, while other provinces have yet to seriously consider the issue.
- This paper provides a descriptive analysis of existing and planned legislation in Canadian provinces and provides discussion on a possible federal approach.
- Recent events have shed more light on the direction the Federal government intends to take.

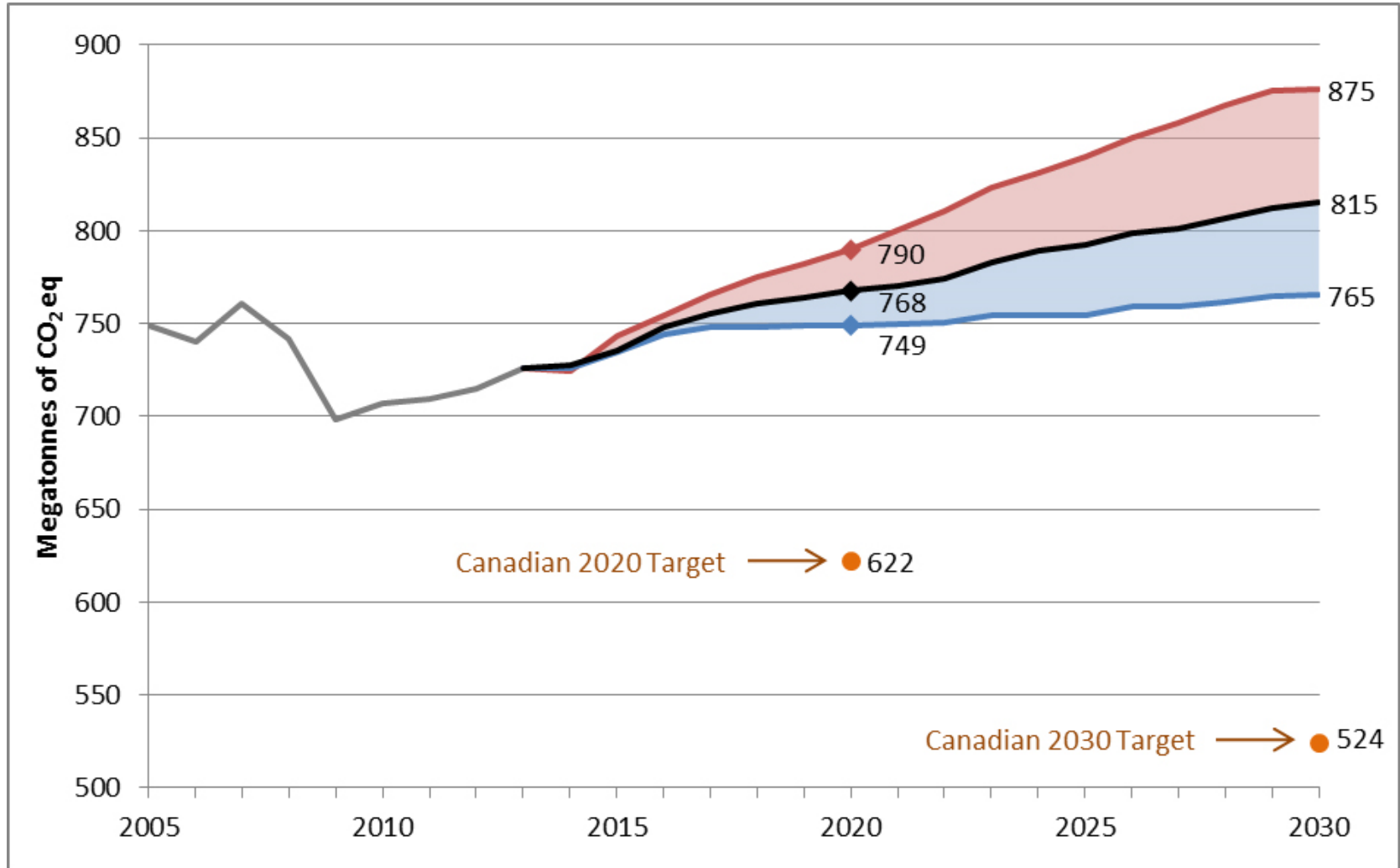
## Paris Accord

- A long-term goal of keeping the increase in global average temperature to **well below 2°C** above pre-industrial levels;
- To aim to limit the increase to **1.5°C**, since this would significantly reduce risks and the impacts of climate change;
- On the need for **global emissions to peak as soon as possible**, recognising that this will take longer for developing countries;
- To undertake **rapid reductions thereafter** in accordance with the best available science.

## Canada's Commitment

- Canada's Plan calls for a 30% reduction in Greenhouse Gas emissions from 2005 levels by 2030.
- However, predictions by Environment Canada indicate a continued rise in Canada's emissions under the status quo approach,

# Environment Canada's Predictions



## 2016 Federal Budget

- 128.8 million was pledged to deliver energy efficiency policies and programs throughout the nation.
- \$50 million going specifically towards developing clean technologies in the oil and gas sector.
- \$2 billion in funding to create a Low Carbon Economy Fund, which is stated to support provincial and territorial actions that materially reduce GHG emissions and achieve significant reductions by the 2030 target.

# Vancouver Declaration

- The First Ministers agreed to implement GHG mitigation policies that would help Canada meet or exceed its 2030 target of a 30% reduction from 2005 levels.
- Various commitments made including the implementation of carbon pricing mechanisms and the establishment of working groups

## Recent Announcements

- More recently, the Prime Minister indicated that the carbon price would start at a minimum of \$10 a tonne in 2018, rising by \$10 each year to \$50 a tonne by 2022 and if neither a carbon price nor cap and trade is in place by 2018, the government of Canada will implement a price in that jurisdiction.



## Canada – Emissions Reporting

- In 2004, the federal government introduced the Greenhouse Gas Emissions Reporting Program. The program requires that all facilities which emit the equivalent of 50,000 tonnes of CO<sub>2</sub> annually submit a report to Environment Canada.

# Canada – Coal Regulation

- In 2015, the *Reduction of Carbon Dioxide Emissions from Coal-Fired Generation of Electricity Regulations* were enacted pursuant to *The Canadian Environmental Protection Act, 1999*
- The Regulations require that coal-fired electrical generation facilities must not exceed an intensity limit of 420 tonnes of CO<sub>2</sub> emissions per gigawatt hour of electricity that is produced.
- The performance standard will be applied to new and old coal-fired electricity generation units and units that have reached the end of their useful life.
- Applies to new facilities built on or after July 1, 2015
- Older facilities are grandfathered if built before 1975, until 2019.
- Older facilities built between 1974 and 1986 have until 2029 to comply.
- Units commissioned in or after 1986 will reach their end-of-useful-life on December 31st of the 50th year that follows their commissioning date.
- Units that incorporate technology for CCS can apply to receive a temporary exemption from the performance standard until December 31, 2024.

# Canada- Fuel Regulation

- The Federal government has also begun regulating and reducing emissions in the transportation sector.
- Canada has regulations in place that mandate the minimum amount of renewable content in fuel. Enacted pursuant to *CEPA*, *The Renewable Fuels Regulations* require that renewable content constitute at least 5% of the volume (in litres) of a primary supplier's gasoline pool.
- *The Regulations Amending the Passenger Automobile and Light Truck Greenhouse Gas Regulations* regulate emission standards of 2012 and newer model passenger vehicles, light trucks and heavy-duty vehicles. *The Heavy-Duty Vehicle and Engine Greenhouse Gas Emission Regulations* regulate emission standards of 2014 and newer heavy-duty vehicles.

# British Columbia

Initiative	Description
2008 Climate Action Plan	The strategy included plans to enact multiple pieces of legislation concerning climate change.
2015 Climate Leadership Team (CLP)	The Climate Leadership Team was appointed by the government of British Columbia in May 2015 and released its report in November that same year. In its report, 32 recommendations were made for incorporation into the new <u>Climate Leadership Plan</u> .
<i>Greenhouse Gas Reduction Targets Act (2008)</i>	Setting 2007 emissions as a baseline, the act requires that the province's GHG emissions be reduced at least 33% below the baseline level by 2020.
Climate Leadership Plan (2015)	Under the CLP, the target from the GGRTA is bypassed in favour of creating a new target: by 2050, the goal is for BC to reduce GHG emissions to 80% below 2007 levels

# British Columbia

Initiative	Description
<i>Carbon Neutral Government Regulation (2010)</i>	The Act also required that as of 2010, the public sector had to be carbon neutral. With the introduction of the CLP, the public sector is now expected to reduce its annual emissions by up to 1 million tonnes by 2050.
<i>The Renewable and Low Carbon Fuel Requirements Regulation (2010)</i>	By 2020, fuels are required to have a 10% reduction in carbon content. A further requirement by 2020 is that there must be 5% renewable content in gasoline and 4% renewable content in diesel.
<i>The Carbon Tax Act (2008)</i>	The tax is revenue neutral and covers 70% of the province's emissions. The newly implemented CLP confirmed that the province's carbon tax would remain the same, at a price of \$30 per tonne of CO <sub>2</sub> .

# British Columbia

Initiative	Description
<i>Greenhouse Gas Industrial Reporting and Control Act (2014)</i>	Creates a cap and trade system in BC. The GGIRCA sets an emissions benchmark for liquefied natural gas (" <b>LNG</b> ") facilities. These facilities have an emissions limit of .16 CO2 equivalent tonnes for each tonne of LNG produced. Producers who exceed CO2 limits can purchase funded units to meet compliance requirements. Performance standards for other resources will likely be added soon.
<i>The Greenhouse Gas Emission Reporting Regulation (2015)</i>	This regulation requires that facilities which emit over 10,000 tonnes of CO2 annually report their emissions. Facilities that emit over 25,000 tonnes of CO2 annually must have their reports independently verified.
<i>The Greenhouse Gas Emission Control Regulation (2015)</i>	This regulation establishes the structure and requirements for, amongst other things, funded units. The cost of a funded unit is \$25. Additionally, the regulation creates the British Columbia Carbon Registry to manage compliance units.
<i>The Greenhouse Gas Emission Administrative Penalties and Appeals Regulation (2015)</i>	This regulation establishes penalties for non-compliance with the Act.

Initiative	Description
<i>The Climate Change and Emissions Management Act (2007)</i>	The specified gas emission target for Alberta is a reduction by December 31, 2020 of specified gas emissions relative to Gross Domestic Product to an amount that is equal to or less than 50% of 1990 levels.
<i>Specified Gas Emitters Regulations (2007)</i>	Facilities emitting more than 100,000 tonnes of CO <sub>2</sub> /yr must reduce their emissions by 20% starting in 2017 (with an interim increase to 15% in 2016) instead of the previous 12% Facilities that do not meet target must purchase fund credits at \$30/tonne (amended 2015)
Climate Leadership Plan (2015)	<ul style="list-style-type: none"> <li>• Phase out coal by 2030.</li> <li>• Replacing our present emissions intensity carbon pricing program with one that's based on an emissions performance standard.</li> <li>• Alberta will transition to a \$30/tonne carbon price for oil sands facilities to drive towards reduced emissions.</li> <li>• A legislated maximum emissions limit of 100Mt in any year.</li> <li>• Alberta is targeting a 45% reduction in methane gas emissions from Alberta's oil and gas operations by 2025.</li> </ul>

Initiative	Description
<i>Climate Leadership Act</i> (which comes into force January 1, 2017)	<p>Implements a carbon pricing scheme. The carbon levy will be included in the price of all fuels that emit greenhouse gases when combusted. These include transportation and heating fuels such as diesel, gasoline, natural gas and propane. It will not apply directly to consumer purchases of electricity.</p> <p>Starting January 1, 2017, the carbon levy will be applied to fuels at a rate of \$20/tonne. One year later, the levy will increase to \$30/tonne.</p>
<i>Energy Efficiency Alberta Act</i>	Creates a corporation whose mandate includes raising awareness and promoting energy efficiency measures.
<i>The Alberta Personal Income Tax Act</i>	Provides rebates to Albertans for amounts paid through carbon tax
<i>The Alberta Corporate Tax Act</i>	The province's small business corporate income tax rate will be reduced from 3% to 2% on January 1, 2017.



Initiative	Description
<i>The Management and Reduction of Greenhouse Gases and Adaptation to Climate Change Act (2010) (not in force)</i>	<ul style="list-style-type: none"> <li>• Reduce emissions by 20% below 2006 levels by 2020. The emissions threshold is 50,000 tonnes of CO<sub>2</sub> or equivalent.</li> <li>• Regulated emitters are required to reduce emissions by 2% per year over the baseline emission level from 2010 to 2019 in order to achieve a net reduction of 20% by 2020 over 2006 levels. Failure to do so would result in carbon compliance payments being required.</li> <li>• Creates Office of Climate Change</li> </ul>
Go Green Fund	Contributed around \$60 million to support objectives such as reductions or avoidance of GHG emissions, water level and quality issues, biodiversity, and building public awareness of environmental issues.
Carbon Capture Development	SaskPower, the province's largest producer of GHG emissions, has implemented carbon capture and storage (CCS) technology.
Renewables	SaskPower set a target in November 2015 to increase its electrical generation capacity from renewable sources to 50% by 2030.

# Saskatchewan

Initiative	Description
White Paper (October 2016)	<p>Recommendations 13</p> <ol style="list-style-type: none"> <li>1. Refocus conversation to technology</li> <li>2. Main impediment to clean technology is capital and Federal government should increase contribution to research</li> <li>3. Federal government should abandon carbon tax</li> <li>4. Federal government should reject cap and trade</li> <li>5. Calls on Federal government to support CCS technology and export to countries where it can have a profound impact (Clean Development Mechanism –Kyoto?)</li> <li>6. SaskPower will increase use of renewables. Calls on Federal government support for this.</li> <li>7. Saskatchewan calls on the federal government to take a leading role in a program to develop a small reactor that could be deployable in Canada and all over the world.</li> <li>8. Saskatchewan calls on the federal government to introduce a nuclear regulatory regime that recognizes the potential of transformational change in reactors.</li> <li>9. Saskatchewan expresses deep concerns with the manner and timetable for new methane regulations.</li> </ol>

# Saskatchewan

Initiative	Description
Whitepaper	<p>10. Saskatchewan will continue to press the federal government for assurances that methane regulations in Canada are introduced at the same time and at the same level of intensity as actions taken in the United States.</p> <p>11. Increasing food production must be factored into goals of emission management</p> <p>12. Saskatchewan's forests and agricultural lands are significant carbon sinks. Zero till and low till farming practices play a significant role in increasing carbon absorption.</p> <p>13. Serious effort must also be made to adapt to the changes that will occur from climate change.</p>

Initiative	Description
<i>The Climate Change and Emissions Reductions Act (2008)</i>	The Act set an initial target of reducing GHG emissions to at least 6% less than Manitoba's total 1990 emissions by 2012.
Manitoba's Climate Change and Green Economy Action Plan	<ul style="list-style-type: none"> <li>• The Plan committed Manitoba to reducing its GHG emissions by 30% of 2005 levels by 2030, 50% of 2005 levels by 2050, and to become carbon neutral by 2080.</li> <li>• The Plan also contemplates the introduction of a market-based cap-and-trade-program which would be linked to Ontario and Quebec's cap-and-trade systems. A timeline has not yet been announced for the implementation of Manitoba's cap-and-trade program.</li> </ul>
<i>Emissions Tax on Coal Act. (2012)</i>	Tax on tonne of coal produced: bituminous (\$22.57/t); Sub-bituminous (\$17.37/t); Lignite (\$14.27/t); Anthracite and any other grade (\$23.97/t); Petroleum Coke (\$31.9/t)

Initiative	Description
Go Green: Ontario's Climate Action Plan (2007)	Plan set emissions levels to a 1990 baseline. Emission levels are required to be 15% below 1990 levels by 2020, and 80% below 1990 levels by 2050.
Climate Ready: Ontario's Adaptation Strategy and Action Plan (2011)	The Plan was centrally concerned with climate adaptation and supported investments in green infrastructure.
Climate Change Strategy (2015)	The strategy added a new emissions reduction goal of 37% below 1990 levels by 2030. Amongst other strategies, this plan promised the introduction of climate change legislation.
Climate Change Discussion Paper (2015)	Outlined several potential policies concerning carbon pricing
Climate Change Action Plan 2016-2020	The Plan provides commitments that will allow the province to meet its 2020 emissions reductions target, and the framework necessary to meet the province's 2030 and 2050 targets.

Initiative	Description
<i>Climate Change Mitigation and Low-Carbon Economy Act (2016)</i>	<ul style="list-style-type: none"> <li>• Implements a cap and trade system in effect January 1, 2017</li> <li>• Linked to Quebec and California</li> <li>• Any money raised from the cap and trade program is to be deposited in a Greenhouse Gas Reduction Account which in turn invests in green projects and initiatives around the province.</li> <li>• The Act's primary method of emissions reduction is through its reduction in emission allowances. One emission allowance is equal to 1 tonne of GHGs. The government will annually decrease the number of emission allowances. As an example, in 2017 there will be 142,332,000 Ontario emission allowances, whereas in 2020 there will be 124,668,000</li> </ul>
<i>The Cap and Trade Program Regulation (2016)</i>	These regulations came into effect on July 1, 2016. The Regulation establishes that a facility producing 25,000 tonnes or more of GHG emissions annually classifies as a mandatory participant in the cap-and-trade program.
<i>The Quantification, Reporting and Verification of Greenhouse Gas Emissions Regulation (not in force)</i>	Details the types of emissions that fall within the scope of the Act, such as, from the production of copper and nickel, glass, hydrogen, iron and steel, lead, lime, magnesium, nitric acid, petrochemicals, phosphoric acid, primary aluminium, and zinc. Additionally, the scope includes activities concerning coal storage, production and operation of electrical transmission systems, storage and transportation of natural gas, and petroleum refining.

Initiative	Description
2006-2012 Climate Change Action Plan	The plan called for a 6% reduction in GHG emissions by 2012
2013-2020 Climate Change Action Plan	<p>The strategies forwarded by this plan include sustainable land management, encouraging green technology, and a reduction in public sector GHG emissions.</p> <p>20% below 1990 levels by 2020  37.5 % below 1990 levels by 2030  80-90% below 1990 levels by 2050</p>
<i>The Environment Quality Act</i>	Establishes cap and trade system.
<i>The Regulation Respecting a Cap-and-Trade System for Greenhouse Gas Emission Allowances</i>	<p>Regulation applies to any emitter of more than 25,000 tonnes of GHG emissions annually. However, regardless of emission levels, the Regulation applies to municipalities and facilities involved in:</p> <ul style="list-style-type: none"> <li>• Mining, quarrying, oil and natural gas extraction;</li> <li>• Electric power generation, transmission and distribution;</li> <li>• Natural gas distribution;</li> <li>• Steam and air conditioning production for industrial purposes;</li> <li>• Manufacturing; and</li> <li>• Pipeline transportation.</li> </ul>

Initiative	Description
<i>The Regulation Respecting a Cap-and-Trade System for Greenhouse Gas Emission Allowances</i>	<ul style="list-style-type: none"> <li>Beginning in 2015, Quebec has annually reduced its number of emission units. For example, in 2015 the province issued 65.30 million emission units, but Quebec will only issue 54.74 million emission units in 2020.</li> <li>Quebec grants a number of no-charge emission units to facilities. In particular, these are granted to industries exposed to foreign competition to mitigate the risk of "carbon leakage" which occurs when international companies move production off-shore to jurisdictions without cap-and-trade systems.</li> <li>Emissions that are not allocated free of charge are auctioned off throughout the year. A minimum emission unit price of \$10.75 was set in 2013. This rate will annually increase at a rate of 5% plus inflation until 2020.</li> </ul>
2030 Energy Policy (2016)	This plan requires that by 2030 Quebec must enhance its energy efficiency by 15%, reduce the amount of petroleum products consumed by 40%, eliminate the use of thermal coal, increase overall renewable energy output by 25%, and increase bioenergy production by 50%.



# New Brunswick

Initiative	Description
Climate Change Action Plan (2007)	Required a reduction of emissions to 1990 levels in 2012 and an additional reduction of 10% below 1990 levels by 2020
Climate Change Action Plan for 2014-2020	<ul style="list-style-type: none"> <li>• The Plan calls for a reduction in GHG emissions to 10% below 1990s levels by 2020, and 75-85% below 2001 levels by 2050.</li> <li>• The province plans to achieve these reduction levels through a combination of improved data collection, improved private sector managerial and technological efficiency, government emission reductions, and improved progress reporting.</li> </ul>

# Prince Edward Island

Initiative	Description
<u>Climate Change Strategy</u> (2008)	<ul style="list-style-type: none"> <li>• 47 action items intended to forward four major policies.</li> <li>• These are to lower greenhouse gas emissions, enhance carbon sinks, help people prepare for the impacts of climate change, and increase public awareness.</li> <li>• Examples of these action items include endorsing the concept of a low carbon fuel standard, developing GHG emission inventories, and incorporating information on fuel-efficient driving practices in the Driver's Handbook and Driver Examinations.</li> <li>• To 1990 levels by 2010 (target met), 10% below 1990 levels by 2020, and 35-45% below 1990 levels by 2030.</li> </ul>

Initiative	Description
Climate Change Action Plan (2009)	<ul style="list-style-type: none"> <li>• The Plan set an annual emission reduction goal of 5 mts annually.</li> <li>• The plan has established short, medium, and long-term reduction targets.</li> <li>• By 2015, the province was expected to be at least half-way to its 2020 target.</li> <li>• By 2020, the province aims to reduce its GHG emission to at least 10% below 1990 levels.</li> <li>• The final target is for the province to reduce its GHG emissions from human sources by up to 80% below current levels by 2050.</li> </ul>
<i>The Greenhouse Gas Emissions Regulations</i> (2009)	<ul style="list-style-type: none"> <li>• Apply to any electricity producer than has more than 10,000 tonnes of GHG emissions annually.</li> <li>• Each year the total emission cap for all facilities in the province is lowered.</li> <li>• The total allowable emission amount was 19.22 million tonnes in 2011, but will only be 4.5 million tonnes in 2030.</li> </ul>
<i>The Air Quality Regulations</i> (2005)	Regulations require a substantial reduction in the emission of sulphur dioxide and nitrogen oxide, eg the province was allowed a total of 145,000 tonnes of sulphur dioxide in 1995 alone, during the period from 2015-2019 the province is only allowed a cumulative total of 304,500 tonnes

# Nova Scotia

Initiative	Description
<i>Environmental Goals and Sustainable Prosperity Act</i>	Adopts a framework to transition to cleaner energy sources, to improve energy efficiency ratings and building codes, and to reduce the emission levels of specific gases at different timeframes that collectively constitute GHGs
Nova Scotia's Renewable Electricity Plan	<ul style="list-style-type: none"> <li>• The plan set renewable electricity generation targets of 25% by 2015 and 40% by 2020</li> <li>• In 2015, almost 27% of Nova Scotia's electricity was supplied by renewable energy sources, like wind, tidal, biomass, and hydro, Nova Scotia claims to be on track to reach 40% by 2020, despite Nova Scotia historically being dependent on coal and oil based power sources.</li> <li>• As of 2014, Nova Scotia has already reduced GHG emissions 17% below 1990 levels, the most of any province in Canada, and is on track to reach 24% by 2020.</li> </ul>

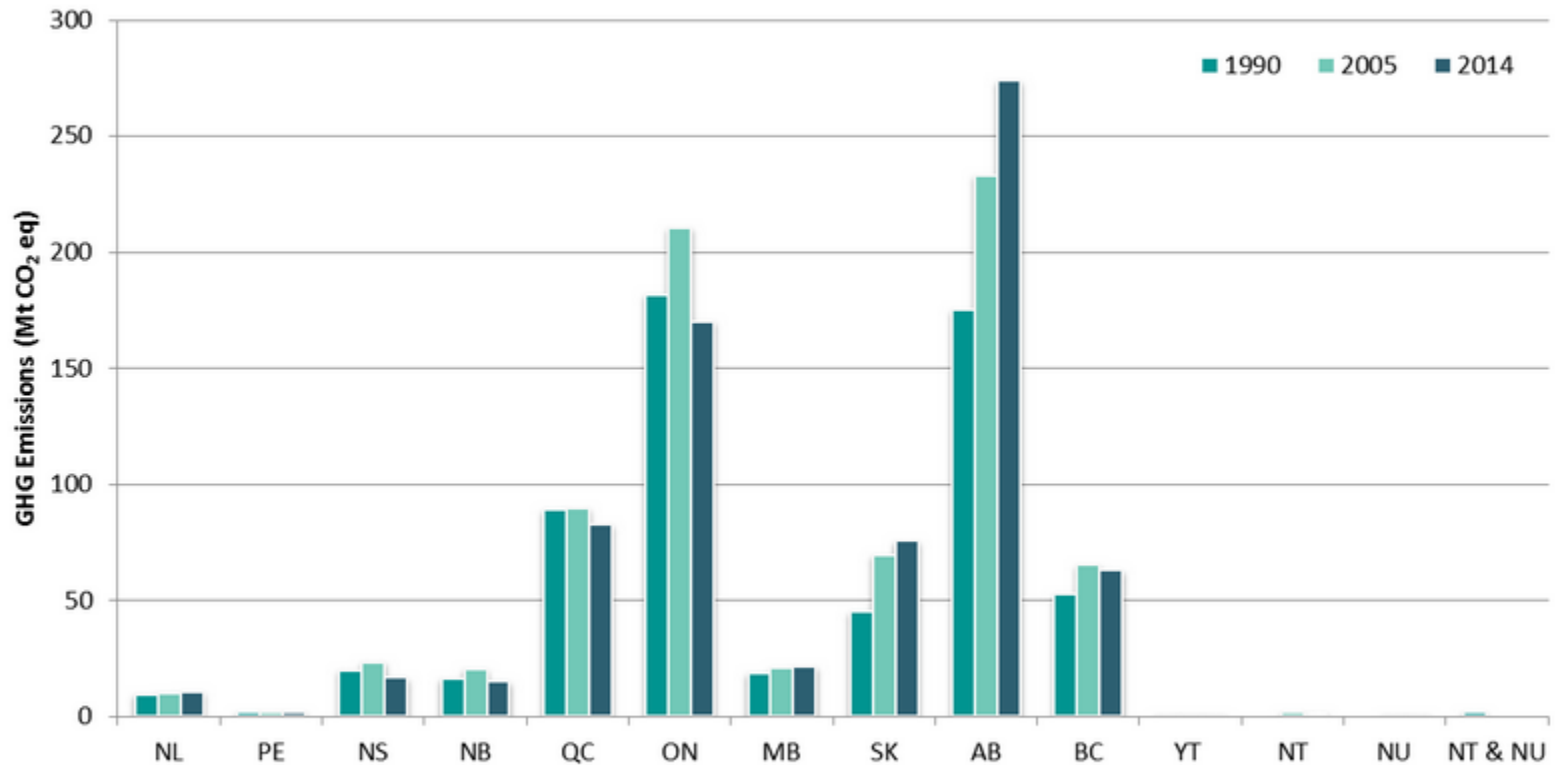
# Newfoundland

Initiative	Description
<i>The Sustainable Development Act</i>	The Act created a provincial Round Table on Sustainable Development to encourage greater sustainable development in the province, particularly in the context of natural resource development.
Charting Our Course	The 2011 Plan requires emissions reductions to be 10% below 1990 levels by 2020 and 75-85% below 2001 levels by 2050.

Territory	Initiative	Description
Yukon	Climate Action Plan	<ul style="list-style-type: none"> <li>• Goal of becoming carbon neutral by 2020, supporting energy efficient building standards, and establishing green action committees in government departments</li> <li>• Advancing knowledge of climate change</li> </ul>
NWT	2011-2015 Strategy Solar Energy Strategy Biomass Energy Strategy	<ul style="list-style-type: none"> <li>• The territory set a goal to stabilize emissions at 2005 levels by 2015, to limit emissions increases to 66% above 2005 levels by 2020, and to return to 2005 levels by 2030</li> <li>• Promote solar energy</li> <li>• Make biomass energy an integral part of energy mix</li> </ul>
Nunavut	2003 Climate Strategy  Upagiaqtavut – Setting the Course: Climate Change Impacts and Adaptation in Nunavut	The plan established a 2003-2013 goal of controlling and reducing GHG emissions, identifying and monitoring climate change impacts, and developing adaptation strategies.

# State of the Confederation

Figure S-9: Emissions by Province in 1990, 2005 and 2014



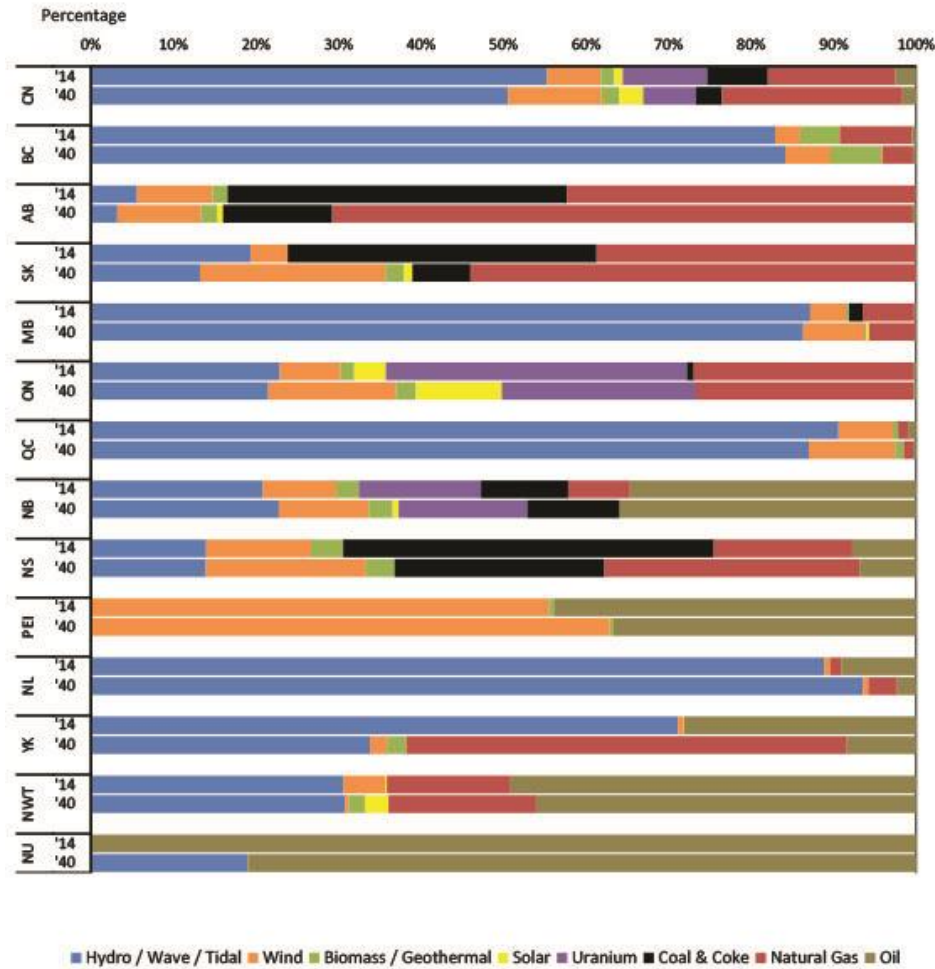
► [Description for Figure S-9](#)

# Hydro Advantage?

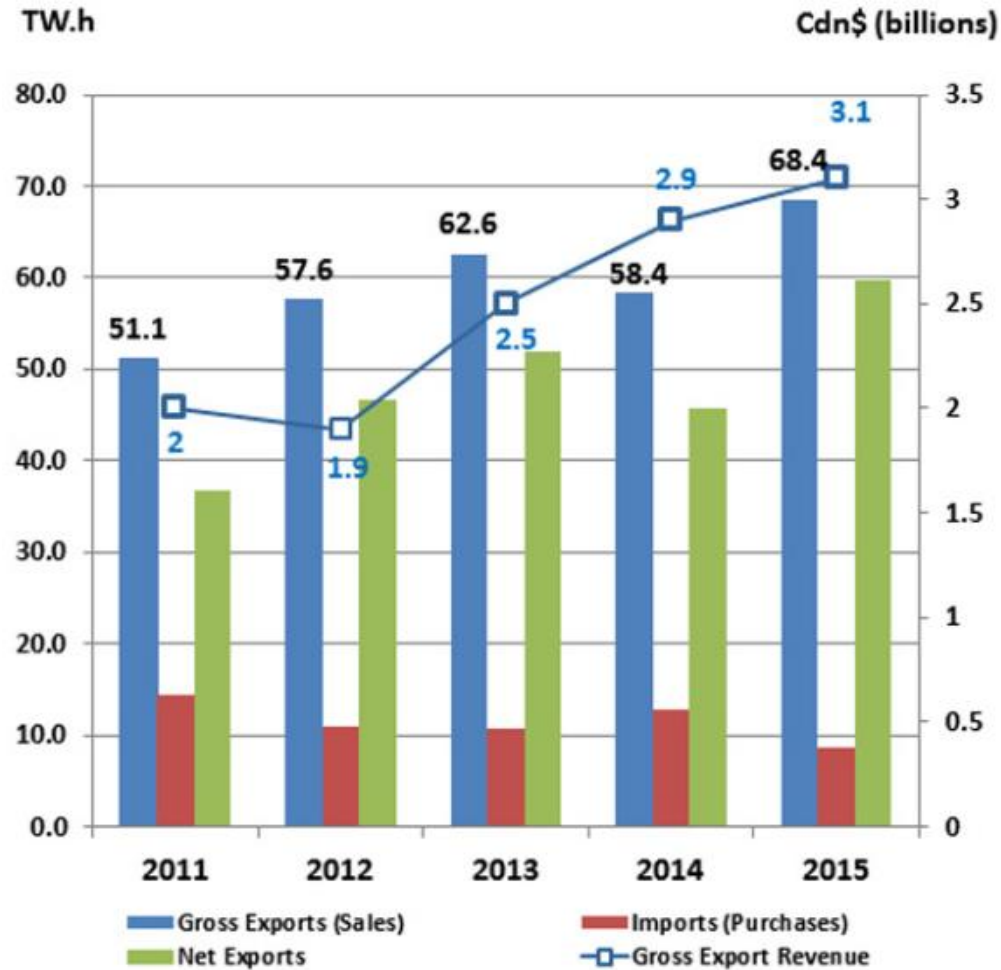
- Certainly provinces with significant hydro resources have an advantage in reducing carbon emissions.



# Generation Mix - Hydro



# Electricity Exports

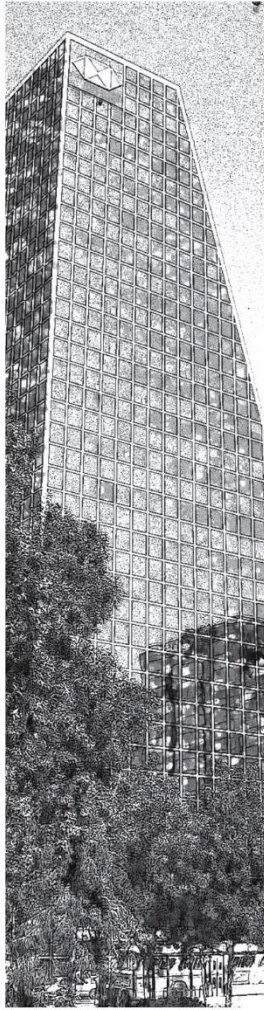


# Hydro Expansions Planned Development

Project	Province/Prop	Capacity	Generation
Site C	BC Hydro	1100 MW	5.1 TWh/yr
Lower Churchill	Nalcor/Nfld.	3000 MW	16.7 TWh/yr
Romaine	Hydro Quebec	1550 MW	8 TWh/yr
Keeyask Conawapa	Manitoba Hydro	695 MW 1485 MW	11.4 TWh/yr
Total			<b>41.2 TWh/yr</b>

\*Saskatchewan used approximately 23.7 TWh/yr in 2015

- Any Questions?



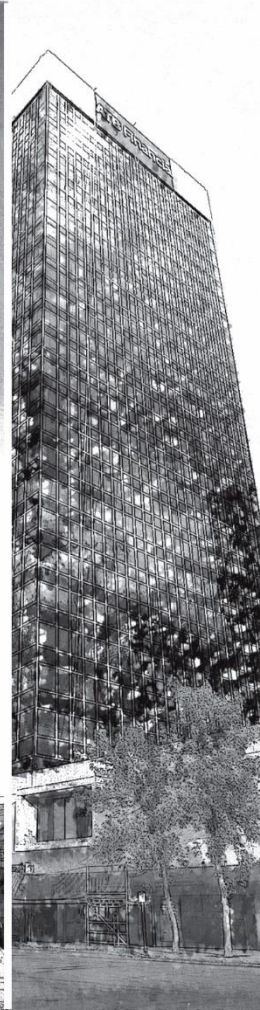
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