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Aggressively reduce emissions and provide affordable energy

Nova Scotia Alternative Budget 2017
Backgrounder on Energy and Climate Change

IN PARIS IN 2015 the world made a historic commitment to reduce greenhouse gas (GHG) emissions. Canada and countries worldwide have since ratified the Paris Agreement[1], to hold the increase in the global average temperature to "well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C".[2]

Despite the ratification of the Paris Agreement, Canada's target remains the weakest in the G7; Canada's emissions reduction target, 30% below 2005 levels by 2030, is inadequate for a 2°C or 1.5°C future. Canada is also the world's third highest per capita GHG emitter.[3] Canada, and the world, will not meet their Paris commitments unless we do much more than is currently planned.[4]

In the last decade, Nova Scotia has been a clear leader in GHG reductions in Canada. However, in the last year, amidst major national emissions reductions, Nova Scotia has stepped back from its leadership role.

The final budget of the current Liberal government in Nova Scotia did not contain any additional revenue attributed to carbon pricing even though the government has said it will move forward with a cap and trade system. The limitations being proposed on this system means no additional revenue will be generated that could be used to mitigate the additional costs for those least able to afford them and to assist in the transition to a greener economy. The only mention in the budget was the $1.6 million cost to set up the system with no resources dedicated to further consultation or even communication/public education about the proposed system.[5]

In contrast, the Nova Scotia Alternative Budget (NSAB) demonstrates how Nova Scotia can continue to lead GHG reductions while ensuring energy is accessible to all Nova Scotians, regardless of income, through fair taxation and smart investment decisions. It shows how measures designed to reduce GHG emissions can support positive economic co-benefits enabling more Nova Scotians to stay and contribute to the future prosperity of the province.

In addition to being environmentally sound, policies that foster climate change mitigation can also lead to lower energy costs and reduced debt as energy efficiency and access to renewables improve; more comfortable homes; better transportation; reduced illness, and healthcare costs, as pollutants related to fossil fuel combustion decrease[6]; and the increased growth of green-sector jobs to support a low-carbon transition. In 2013, the rate of growth in the green energy sector surpassed growth in all of Canada's economic sectors,[7] with more jobs available in green energy than the tar sands by the end of 2014.[8]

Reduction of GHGs, Nova Scotia's track record

Nova Scotia is rightfully proud of the work done so far to reduce our GHGs; by 2014 our GHGs were 17% below our 1990 level, a bigger reduction than any other province.[9] We legislated goals for 2020 to increase the share of our electricity generated using renewable sources to 40% and to decrease greenhouse gas emissions to 10% below 1990 levels. We have met the GHG goal and our use of renewables has already increased to 27%.

However, our dependence on coal-fired electricity meant that we had one of the highest levels of GHG emissions per person in Canada in 1990. In 2015, almost 70 percent of our electricity needs were still met using carbon intensive fossil fuels, with over 55 percent from heavily polluting coal.[10] We are now 5th among Canadian provinces in GHG emissions per person.

Nova Scotia's Promises

As part of the Pan-Canadian Climate Framework, Nova Scotia intends to sign an Equivalency Agreement that allows Nova Scotia to continue to burn coal into the 2030s, unlike the rest of Canada. We must do better.

The province will introduce a limited cap and trade carbon pricing system to comply with federal carbon pricing requirements. Many details of the Equivalency Agreement and the Cap and Trade system remain unknown.

Furthermore, the Nova Scotian government does not have an effective, comprehensive plan to eliminate energy poverty. Nova Scotia does have good programs to reduce energy costs of low income households through efficiency: it pays for free insulation in oil heated homes owned by low income households and funds two modest programs to help low income households with their heating bills. More than 50% of low income households are renters and the government committed to funding a pilot program for efficiency retrofits for rental properties that serve low income households as well as an efficiency program for First Nations homes.

By far the most expensive energy subsidy is Your Energy Rebate Program (YERP), the 10% sales tax rebate on electricity and heating bills that applies to all Nova Scotians (costs just upwards of $100 million per year). YERP is the opposite of a carbon price; it does not provide an incentive to reduce GHGs and subsidizes the energy consumption of higher income households.

With the absence of emissions reduction and renewable energy targets past 2020, no clear date for phasing out our coal plants, and other energy and climate policies, such as the cap and trade program still under development without broad public consultation, the future of climate action in Nova Scotia remains uncertain.

Think Again: a Carbon Tax is what we need

Given the gap in national and international efforts, Nova Scotia must do our part to rapidly reduce GHG emissions. We can do this while eliminating energy poverty and helping moderate-income Nova Scotians afford the energy they rely on.

Carbon pricing seeks to put a price on harmful GHG emissions in a way that encourages energy producers and end users to lower their consumption, to accommodate the increasing cost of engaging in carbon-intensive activities. In 2016, the federal government established a national standard for carbon pricing.[11]

Cap and Trade vs. Carbon Tax

There are two basic approaches to carbon pricing: cap and trade or a direct carbon tax, levy, or fee.

Cap and trade schemes establish clear GHG reduction targets. However, evidence from actual cap and trade schemes around the globe has revealed that they often suffer from chronic low prices and price volatility[12] as a result of design features that set emissions caps too high, distribute carbon allowances for free to heavy emitters, and include generous carbon offset provisions. The result is depressed prices that are unable to provide the incentive needed to transition to less carbon-intensive activities.

TABLE 1 Carbon Price and Revenue, 2017–2022 ($ in millions)

Fiscal Year	2017/18	2018/19	2019/20	2020/21	2021/22
Carbon Price/tonne	$10	$20	$30	$40	$50
Revenue Generated/year	$154	$307	$461	$614	$768

The current design features of the proposed cap-and-trade system in Nova Scotia are particularly problematic because they propose providing the allowances for free.

A tax, fee, or levy on carbon provides price certainty and the ability to set prices that are able to better assist in supporting a low-carbon transition. It applies to transportation, heating oil and industrial fuels in addition to fossil fuel fired electrical generation.

The NSAB continues to support the implementation of a carbon tax that provides additional revenue half of which is to be used to compensate low- and middle-income households for additional costs, and the other half of the revenue to assist the transition as part of a broader climate change mitigation policy framework.

Carbon Pricing Action 1: A Carbon Tax for Nova Scotia

In order to continue to do our fair share in reducing GHGs and to take advantage of other benefits of a low-carbon economy, the NSAB adopts a carbon tax in Nova Scotia in line with the federal framework.[13]

Our carbon tax would commence in the 2017/18 fiscal year, with an initial rate of $10 per tonne of carbon dioxide equivalent (tCO_2e) emitted, increasing in $10 increments per year, to reach $50 per tCO_2e by the 2021/22 fiscal year.[14]

Carbon Pricing Action 2: A Carbon Tax Benefit for Nova Scotians

The NSAB returns half of the carbon tax revenue per year to low- and middle-income Nova Scotians through a Carbon Tax Benefit so that, on average, no net carbon tax is paid by the province's most vulnerable and marginalized citizens or by many middle-income families.

The Carbon Tax Benefit would be payable to at least 50% of NS families and 80% of individuals. Families earning up to $75,000/year would receive the full rebate and single people earning up to about $40,000/year would receive the full rebate. This is similar to Alberta's carbon levy and rebate.[15] We estimate that a Carbon Tax

Rebate of about $350/year per family (depending on family composition) and $200/year for a single person would cover average costs associated with the Carbon Tax.

The inshore fishery and agricultural sectors would be exempted from the carbon tax, while other measures to help them reduce their carbon footprint would be taken. Small town and rural households, with fewer transportation options, would also receive an additional $25/year rebate to offset their higher annual transportation costs.

Carbon Pricing Action 3: GHG Reduction & Green Jobs Transition Fund

The NSAB allocates the remaining half of the carbon tax revenue into a GHG Reduction and Green Jobs Transition Fund.

The GHG Reduction portion of this fund is designed to support transparent investment incentives and public expenditures to galvanize Nova Scotia's low-carbon transition through renewables, energy efficiency, and innovation priorities. Low-carbon industries represent a greater opportunity for job growth and local economic investments than traditional energy industries[16]. The fund prioritizes investments that leverage co-benefits related to reducing overall levels of poverty and inequality in the province. Examples of potential uses include: energy efficiency and renewables installation for low-income households, improved public transit in disadvantaged communities, and jobs training programs for low-income citizens in the renewable energy sector.

The Green Jobs Transition portion of this fund is targeted to include strong support and training programs to enable workers to make a justice-based transition to a prosperous low-carbon economy. It also supports programming for energy initiatives led by indigenous and other marginalized communities. Paired with investments in growing the green economy, this fund allows individual workers to find work as Nova Scotia makes the transition towards decarbonisation.

Other Energy Actions for Nova Scotia

Establish a 2035 Target for a Carbon-Free, Renewable Electricity System

Electric power generation remains the largest and most immediate opportunity for GHG reductions across Canada and in NS. Ontario has closed its coal-fired electricity plants; Alberta will close its coal-fired plants by 2030. In addition to the equivalency agreement with the federal government, Nova Scotia must adopt a timeline for closing its coal-fired plants by no later than 2035. Nova Scotia must also adopt a timeline for closing its coal-fired plants and for eliminating gas fired plants. Early closure of fossil fuel electricity plants would give us more time to reduce emissions

TABLE 2 NSAB 2017 Energy and Climate Change Summary ($ millions)

Action	Resources	Expenses
Implement a Carbon Tax of $10/tonne of CO2e	$153.50	
Cancel Your Energy Rebate Program (YERP)	$104.50	
Reduce Heating Assistance Rebate Program		-$6
Total revenue and reallocated resources	**$264**	
Pay a Carbon Tax Benefit to at least 50% of households in Nova Scotia		$77
GHG Reduction Fund (investments in low-carbon actions)		$60
Green Jobs Transition Fund (investments to re-skill affected workers)		$16.5
Eliminate energy poverty through a Universal Service Program		$35
Low-income Supports--details in that section of the NSAB		$75.5
Total Costs		**$264**

in areas that are more challenging to target, like the transportation and industrial sectors, and would allow for longer term transitions such as a switch to electric or other low-carbon vehicles.

Pursue All Energy Efficiency Measures That Make Long Term Economic Sense

Efficiency measures are the least expensive way to reduce GHG emissions. Maximizing efficiency measures requires regulatory change, such as ensuring a long term perspective when making decisions about efficiency measures purchased by NS Power. A minimum of $20 million of the proposed Greenhouse Gas Reduction Fund should be spent on aggressive efficiency measures including at least $10 million to expand existing programs to retrofit low income homes.

A high priority would be to shift homes to a Net Zero Ready standard such as Passive House design. In 2014, residential heat and electricity generated approximately 27% of NS' GHG emissions.[17] Home heating fuel use can be reduced by up to 85% economically in new homes with today's technology. Through incentives, training and regulations, new homes can meet the Net Zero Ready standard. Existing homes can as well, although this will take longer. Home generated solar energy and carbon-free electricity will eventually supply the final 15% of home heating energy as solar energy costs decline and the electricity system de-carbonizes.

The result will be homes that are more comfortable and that cost significantly less to heat — with zero use of fossil fuels.

Replace the Your Energy Rebate Program with a Universal Service Program and Poverty Reduction Measures

High energy prices will persist in the transition from fossil fuels to a low-carbon economy. The impact will be especially severe for low income Nova Scotians, many of whom are now forced to choose to "heat or eat".

A Universal Service Program (USP)[18] would limit total home energy costs to 6% of income to cover heat and baseload electricity for low income households. A USP means no Nova Scotians denied heat or electricity due to inadequate income: this is what is meant by "universal service".

In the NSAB, the Universal Service Program is paid for by eliminating the Your Energy Rebate Program (YERP) (costing $104 million 2015-16 year). The USP will also reduce the need for the $12 million Heating Assistance Rebate Program (HARP), a subsidy available to low income households. HARP's budget can be cut by $6 million. The net savings from YERP and HARP after funding the USP is used to increase low-income supports for Nova Scotians who need it the most (a total of $75.5 million). These measures are detailed in the Low-Income Supports section of the 2017 NSAB.

This backgrounder has been prepared by members of the Nova Scotia Alternative Budget Working Group as follows: Kate Ervine, Saint Mary's University; Brian Gifford, Affordable Energy Coalition and Nova Scotians for Tax Fairness; and Stephen Thomas, Ecology Action Centre.

The full Nova Scotia Alternative Budget 2017 can be accessed here: https://www.policyalternatives.ca/publications/reports/nova-scotia-alternative-budget-2017

Notes

1 Paris Agreement Ratification, Government of Canada http://news.gc.ca/web/article-en.do?nid=1133599

2 The overarching goal is ""Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels." See the Paris Agreement: http://unfccc.int/paris_agreement/items/9485.php, https://en.wikipedia.org/wiki/Paris_Agreement

3 How Canada Performs: A Report Card on Canada, The Conference Board of Canada, 2016, http://www.conferenceboard.ca/hcp/provincial/environment/ghg-emissions.aspx

4 By the Numbers: Canadian GHG Emissions, Paul Boothe and Félix-A. Boudreault Lawrence National Centre for Policy and Management, Ivey Business School at Western University, 2016. Pp 13–14.

5 Nova Scotia government, Nova Scotia Cap and Trade Program Design Options (Halifax: Province of Nova Scotia), 2017 https://climatechange.novascotia.ca/sites/default/files/Cap-and-Trade-Document.pdf

6 Pembina Institute, 2016. Out With the Coal, in With the New. Available at: http://www.pembina.org/reports/out-with-the-coal-in-with-the-new-final-.pdf

7 Clean Energy Canada. 2015. *Tracking the Energy Revolution*. Available at: http://cleanenergycanada.org/trackingtherevolution-canada/2015/

8 Blackwell, Richard. 2014. "Green Energy Sector Jobs Surpass Total Oil Sands Employment." *The Global and Mail,* December 2, 2014. http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/green-energy-sector-jobs-surpass-oil-sand-employment-total/article21859169/

9 NS Government website: https://climatechange.novascotia.ca/what-ns-is-doing. These figures are confirmed in "Greenhouse gas emissions by province and territory, Canada, 1990, 2005 and 2014" on a Government of Canada website: https://www.ec.gc.ca/ges-ghg/default.asp?lang=En&n=662F9C56-1#es-5 Table S-4. Both retrieved February 2017.

10 Nova Scotia Power. 2017. "Thermal Electricity." Available at: http://www.nspower.ca/en/home/about-us/how-we-make-electricity/thermal-electricity/default.aspx

11 Government of Canada, Government of Canada Announces Pan-Canadian Pricing on Carbon Pollution, October 3, 2016, http://news.gc.ca/web/article-en.do?nid=1132149

12 "World Bank; Ecofys; Vivid Economics. 2016. *State and Trends of Carbon Pricing 2016*. Washington, DC: World Bank. World Bank. Available at: https://openknowledge.worldbank.org/handle/10986/25160

13 The federal carbon pricing floor starts at $10/tonne in 2018, rising by $10/tonne to $50/tonne in 2022. See "*Government of Canada Announces Pan-Canadian Pricing on Carbon Pollution*", October 3, 2016: http://news.gc.ca/web/article-en.do?nid=1132149

14 This uses the federal standard of $10/tCO2e beginning in 2018 and rising by $10/tonne to $50 by 2022. Our proposal begins in 2017-18, a year before the federal recommendation. Revenue is calculated based on the # of tonnes of tCO2e produced by NS in 2014, excluding agriculture, waste and 50% of domestic aviation and marine, as published in "*Canada — National Inventory Report 1990–2014: Greenhouse Gas Sources and Sinks in Canada – Part 3*", Minister of Environment and Climate Change, 2016, Annex 12 page 74. The calculate total is 16.6-01.15=15.45 tCO2e. The Report is available here: http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/9492.php

15 Alberta Government, *Carbon Levy and Rebates,* available at: https://www.alberta.ca/climate-carbon-pricing.aspx Pembina Institute, *What You Need to Know about Alberta's Carbon Levy.* Available at: http://www.pembina.org/images/alberta/alberta-carbon-levy-infographic.png.

16 http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/green-energy-sector-jobs-surpass-oil-sand-employment-total/article21859169/

17 Numbers calculated from Canada's UNFCCC National Inventory Report and Nova Scotia Power Data: http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/9492.php. http://oasis.nspower.ca/site/media/oasis/20160630%20NSPI%20to%20UARB%2010%20Year%20System%20Outlook%20Report.pdf

18 The core element of a USP is a credit on energy bills that would cover all the costs above 6% of income for a low income household –based on their prior year income and energy costs. For details, see: Roger Colton, Testimony www.rpa.state.nj.us/usfintrm.pdf

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