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Nova Scotia can be a cutting edge world leader in carbon reductions with a socially 'just' carbon pricing system called Fee and Dividend

As the province considers its carbon pricing options, a growing number of experts and pundits are conferring with the Finance and Community Services Departments' policy directors pointing them to and calling for a revenue neutral carbon pollution dividend to every citizen.

The government of Nova Scotia is in the midst of holding public input sessions <http://halifax.mediacoop.ca/blog/joannelight/32979> called "Let's Talk Taxes" posing three "taxing" questions to citizens. The number two question—whether or not the province should introduce a price on carbon—is being debated (as are nos. one and three) in small group sessions after which citizens indicate "yes" or "no" plus commentary. At the Halifax session, a consistent "yes" to carbon pricing was tabulated from the groups' chart paper notes displayed across the room.

The November 2014 "Nova Scotia Tax and Regulatory Review, "Charting a Path for Growth" by Laurel Broten, the Finance Department under Minister Diana Whalen, was officially introduced to a carbon tax for Nova Scotia. On Page

51, “Implement a Tax on Pollution.” She concluded that:

“Nova Scotia should phase in the implementation of a pollution tax regime over the next 10 years. The tax should be revenue neutral to the province, with all available revenue earmarked to provide generous support to low- income families as well as overall corporate and personal income tax relief.”

Nova Scotian intellectuals and journalists have been promoting a price on pollution for some years, In 2008, regional economist, Dr. Lars Osberg, known for his anti-poverty work and chair of Dalhousie University’s Economics Department wrote a paper, “Have Most Canadians Already Met their Kyoto Obligations?—Trends in the CO₂ Content of the Consumption and the Role of Income Inequality” [Email Attachment 1] He prefaces the article:

“The Kyoto Protocol, which Canada signed in 1997, and ratified in 2002, committed Canadians to a collective obligation—reducing greenhouse gases (GHG) emissions to 6% below 1990 levels by 2008-2012. (The U.S. target of a 7% reduction was signed but never ratified.). Total GHG emissions by both nations have in fact increased substantially. But the majority of Americans and Canadians have seen

little change in the real value of their consumption, which is now significantly more energy-efficient, per dollar of spending, that it was in 1990. Many Canadians and Americans have in fact therefore already reduced their own household production of greenhouse gases by as much, or more, than the Kyoto Protocol would require. This paper therefore asks: What individual obligations correspond to Canada's collective commitment? Who has been responsible for the overall increase in Canada's GHG emission? Who should now pay for reduced GHG concentrations?

Osberg's third argument in the paper: "that an escalating carbon tax which is fully refunded as a demo-grant to all citizens offers the best practical hope for efficient and equitable climate change policy. So the evidence for the preference for a carbon fee and dividend type plan has been founded on one of the region's renowned economists for at least seven years.

Well-respected columnist, Ralph Surette in the November 28th edition of the Chronicle-Herald wrote: "(In 10 years, carbon taxes, mostly revenue-neutral, will be universal — even the oil companies are resigned to that)."

<http://thechronicleherald.ca/opinion/1254137-surette-stop-spewing->

[rhetoric-and-digest-tax-report](#) and "“B.C. has been reducing its energy use faster than the national average, and its economy has not suffered, contrary to the usual jeremiads.” (August 22, 2014 edition)

<http://thechronicleherald.ca/opinion/1231323-surette-tax-heresy-on-the-loose>

Only recently has the provincial government reached out by way of its commission of The Broten Report, to opening the books for review.

Whether they expected an official stamp of approval for a B.C. type carbon tax is open to speculation but that is what the minister received. But Nova Scotia already had an assessment and recommendation in Lars Osberg's paper (above) for this type of price on carbon. Because he has lived and examined this region for decades and is internationally published and respected, his preference for a carbon tax with a fully-refunded "demogrant" (as fee and dividend outlines as well) needs to be seriously considered next to the report by an individual only recently moved here from Ontario. Because of Osberg's work in anti-poverty, his assessment naturally needs to be considered as having been based on more research and understanding than Broten's in a province with 50% of its citizens at the \$30,000 or less income bracket. It is clear that Broten favours a B.C. type carbon tax but Nova Scotia has reason and proof to study seriously the carbon fee and dividend proposal based on Osberg's suggestion of it. In an article, "Higher, More Progressive Taxes Would Yield Benefits" by "Affordable Energy Coalition" member and Halifax Herald writer, Brian Gifford wrote:

“Given the empirical evidence, we really are at a point where cash-strapped jurisdictions such as Nova Scotia must justify why they are not leveraging the tax system to alleviate poverty and broaden social supports. We cannot afford not to commit to serious social investments to achieve greater equality and economic growth.”

Carbon Fee and Dividend is a practical example of applying the principle Gifford outlines. It places a steadily-rising fee on the carbon dioxide content of fossil fuels at the well, mine or port of entry. The fee increases steadily each year with the intention of making clean energy cheaper than fossil fuels within a decade. The revenue from that fee is returned to households in equal shares in the form of a dividend cheque. Under this plan [66% percent of Canadian households](#) would break even or receive more in their dividend cheque than they would pay for the increased cost of energy, thereby protecting the poor and middle class from the impacts of the rising fee. A predictably increasing carbon price will send a clear market signal which will unleash investments in the new clean-energy economy.

A study from [Regional Economic Models, Inc. \(REMI\)](#) – released last summer by CCL – looked at the impact of a fee starting at \$10 per tonne of

CO2 that rose \$10 per tonne each year in the United States. In the study, all the revenue from the fee was divided equally among all households and returned as monthly payments. After 20 years, CO2 emissions were cut in half and 2.8 million jobs were added to the American economy. The job growth comes primarily from the stimulus effect of recycling carbon fee revenue into the pockets of people who are likely to spend the money. as the lower income quintile comes out 150% ahead in a Carbon Fee and Dividend scheme whereas in a B.C. type carbon tax, because the lower income quintiles do not pay a lot of tax (relatively speaking) (I'm sure it's lot when you have so little.)) Also a C.F. & D. spares the middle classes as they would break even in such a plan.

In a November 15th op ed in the Chronicle-Herald, "Canada Must Set Carbon-Fee Policy" the national manager and local group leader for Citizens' Climate Lobby put forth a "simpler [than a Cap and Trade plan] market-based approach: implementing a steadily rising fee on carbon-based fuels that returns all revenue collected to Canadian households."

<http://thechronicleherald.ca/opinion/1251116-canada-must-set-carbon-fee-policy>

While in the [Globe and Mail](#) and [Toronto Star](#) journalists have urged Ontario to look to B.C. for its carbon pricing model (the right leaning [National](#)

Post even conceding that a carbon tax would be the most efficient way to reduce greenhouse gas emissions), activists from Citizens' Climate Lobby Halifax <http://www.citizensclimatelobby.ca/node/3> and Citizens' Climate Lobby Halifax on Facebook ; the Affordable Energy Coalition and other Nova Scotian Climate committees are introducing "fairness" into the "pricing pollution discussion." As Lars Osberg points out in his January 2015 paper, "The Carbon Tax and Dividend (CTD) – A Proposal for Sustainability and Fairness" [Email attachment 4] states:

"But lower and middle income Canadians have seen their real incomes stagnate for several decades now. They feel increasingly pressured financially and they are understandably mistrustful of promises that a new tax, which visibly adds to their day-to-day cost of living will be somehow offset by invisible benefits sometime in the future. Unless there is a clear way of counteracting the argument, a carbon tax proposal will always be vulnerable to the Harper government's message that it is an attack on "the hard working Canadian middle class". The CTD proposal is a straightforward way of showing this is wrong--the CTD would improve both environmental sustainability and economic fairness."

Economists and political pundits from either side of the political spectrum have also announced their preference for a revenue neutral carbon pricing system including [Preston Manning](#), a member of the new Canadian Ecofiscal Commission, [Dr. David Robinson](#), Director of Director of the Institute for Northern Ontario Research and Development and Green Party candidate, and [Jeff Rubin](#), economist and author. Recently, Nicholas Rivers, Chairholder, Canada Research Chair in Climate and Energy Policy, released a paper called [The case for a carbon tax in Canada](#), outlining how carbon taxes are effective, efficient, easy to design and transparent, and even popular with the public.

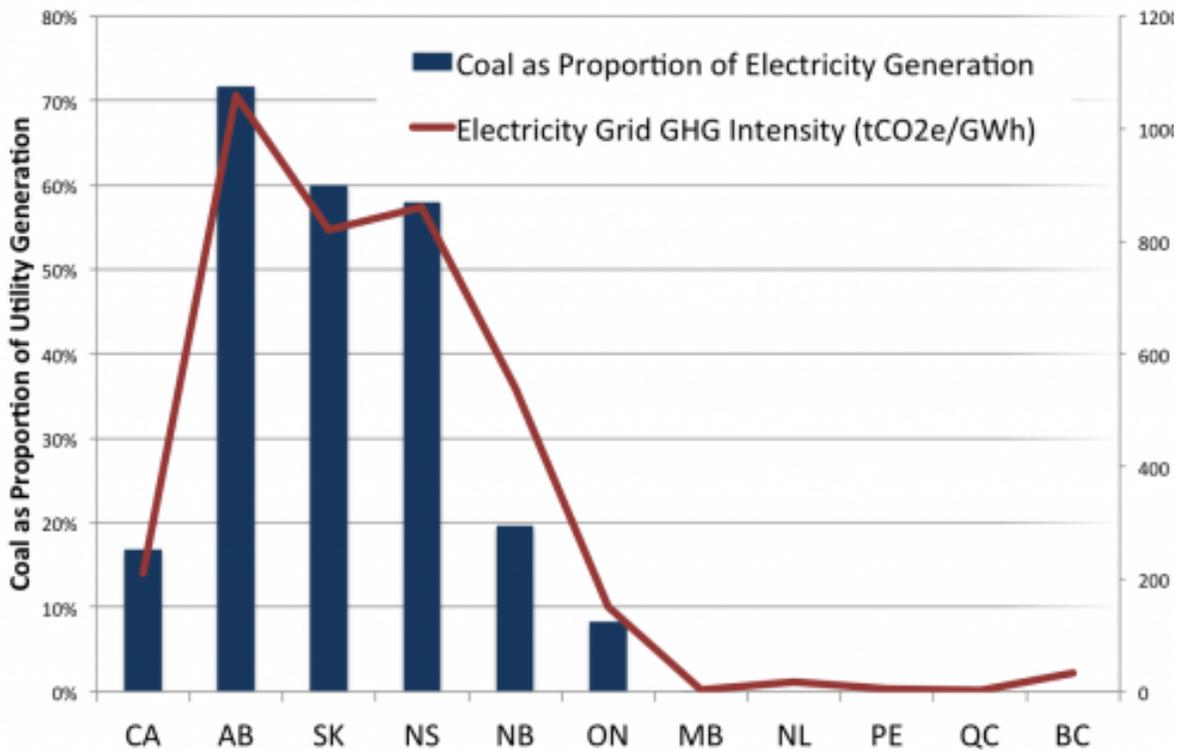
Volunteers from Citizens' Climate Lobby (CCL) Halifax, in a meeting with Finance Minister, the Honourable Diana Whalen <http://halifax.mediacoop.ca/blog/joannelight/32418> listened appreciatively and enthusiastically as she stated that any carbon pricing plan introduced into Nova Scotia must not hurt the "less fortunate." Her comment is further corroborated when we realize that the lower and middle income citizens pay more than their share for carbon pollution. Lars Osberg [Email attachment 1, page 3] writes: "If we recognize that it is consumption which ultimately drives GHG emissions, who then is really responsible for the increase in global concentrations of green house gases...the poor and the middle class

Canadians and Americans of 1990 are not the people who have been responsible for the rising consumption that drives increased global concentrations of greenhouse gases. Nevertheless, under some proposals, the cost of policies to reduce greenhouse gas concentrations will be borne disproportionately by the less well off...” The volunteers were able to reassure the minister that the C.F. & D would do better than that—take a small bite out of poverty. CCL Volunteers are meeting with policy directors in her department this month.

The N.S. Department of Community Services is also studying C.F. & D. after CCL volunteers introduced the plan to Brenda Murray, their policy director. An integration of these two department’s tax application was also a recommendation in The Broten Report.

Carbon Fee and Dividend in Nova Scotia

One of the largest sources of greenhouse gas emissions in Nova Scotia is from burning coal for electricity. In an article by Benjamin Thibault entitled, “Electricity from Coal: Time to Turn the Page on Canada’s Dirtiest Source of Power, this graph shows Nova Scotia’s dubious place in the country’s coal burning:



He writes:

“Reducing coal use in our electricity mix is one of the smartest and fastest ways to achieve substantial reductions in GHG emissions.

Coal’s carbon intensity is so high that cutting it down could make a big difference, and [cost-effective alternatives to coal are ready and waiting.](#)

An analysis by the [Pembina Institute](#) shows that, to meet the current federal government’s GHG reduction commitments, the electricity sector should cut emissions by 37 per cent, or around 40 megatonnes

(Mt), from business as usual. Considering that around half of these reductions could come from Alberta's heavily coal-reliant electricity sector, it's clear that cutting coal use is central to meeting our targets.”

Since Nova Scotia is not far behind Alberta in its use of coal, a carbon fee and dividend plan would levy a fee on all this raw material upstream thus providing a market signal to move to a cleaner source of electricity. This would also cut health costs from the effects of breathing in the waste products of burning coal.

On the website, “one-blue-marble.com,” the blogger, Richard, writes:

“Secondly, we put Nova Scotia Power to work. Without any competition, the corporation has been slow to implement low-carbon policies. A carbon tax will encourage NSP to stop burning coal, which contributes massively to global warming, and as we phase out the coal, consumers pay less carbon tax. Coal hurts everyone, emitting a cocktail of mercury, sulphur, radon and more, even with top-quality scrubbers in place. If NSP needs a nudge, we can educate consumers about coal's inefficiency and NSP's numerous energy options: geothermal, combined heat and power, tidal power, and many more

crucial low-carbon technologies.”

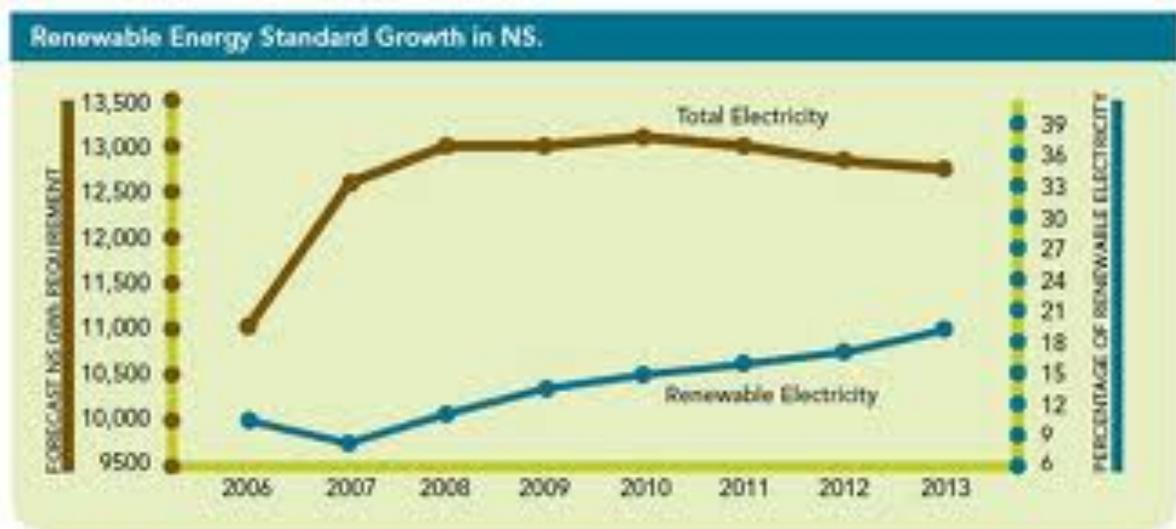
As stated earlier, Citizens’ Climate Lobby Halifax volunteers are meeting with key government people as a result of the heating up around carbon pricing due to the Broten Report tax review.

Nova Scotia’s Clean Energy Technology Industry

The Nova Scotia Business Inc. website

<http://www.novascotiabusiness.com/en/home/locate/sectorinfo/cleantech.aspx>

states that Nova Scotia has legislated targets for 25% renewable electricity by 2015 and a goal for 40% renewable electricity by 2020. The website summarizes the potential in various clean energy technologies and lists businesses operating now in some of these areas.



From <http://climatechange.gov.ns.ca/content/actionplan>

As Nova Scotia's clean technology industry attracts considerable international attention, its accessibility to natural resources, such as wind, tidal and solar, enables the province to engage in significant research and development activities as well as large scale projects.

Research & Development

Several of the province's ten universities have research and development expertise in the Clean Technology sector and are leading the way in various clean technology research and development initiatives. For instance, [Dalhousie University's Research in Energy, Advanced Materials and Sustainability \(DREAMS\)](#) program trains Master and PhD-level students in fields like solar, thermo-electric and energy harvesting materials. As well, [Acadia University's Centre for Estuarine Research \(ACER\)](#) helps explore the impacts of tidal turbines on the Bay of Fundy.

Nova Scotia is also home to Cape Breton University's [Verschuren Centre for Sustainability in Energy and the Environment](#), where break-through research is being done on innovative and sustainable solutions to energy and environmental issues. Capitalizing on these core strengths, the Centre

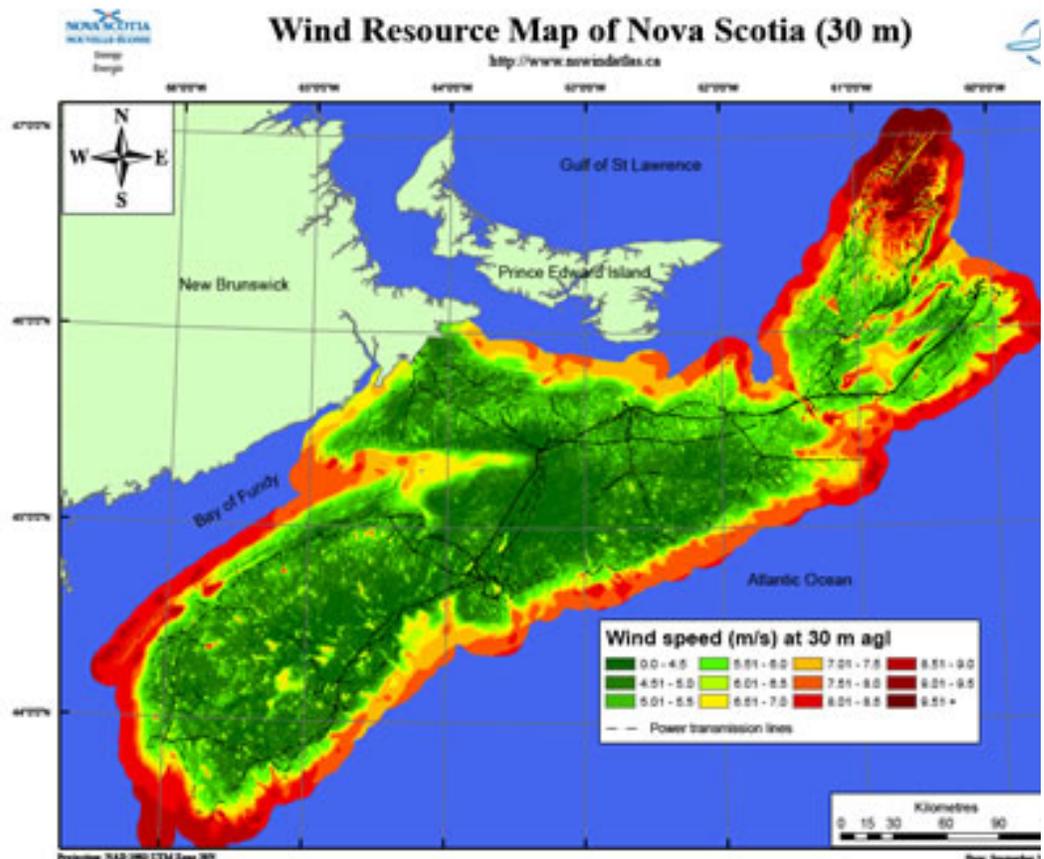
facilitates research and development in two key areas:

Environmental Management (including mine water management and environmental remediation technology; and

Cleaner Energy (including renewable energy and clean carbon energy).

Wind

Nova Scotia has a tremendous wind resource. With some of the highest average wind speeds in Canada, ranging up to speeds of + 9.51m/s, a wind turbine placed in Nova Scotia can produce large amounts of cost-effective power.



Tidal

The Bay of Fundy pushes over 100 billion tonnes of water every tide which is more than all the freshwater rivers and streams in the world combined.

Exciting conditions are hence created for developers, researchers, and the public to better understand the potential of in-stream tidal technology to deliver clean, renewable power for generations to come. A very recent Nova Scotia government press release indicates two tidal power technologies have been selected to compete for future development and application for the Bay of Fundy tidal power potential. View the PR here:

<http://novascotia.ca/news/release/?id=20140120004>

Forests

Nova Scotia is rich in forests, which allows for opportunities to revitalize this industry and its competitiveness by making use of the available wood feedstock for the production of bioenergy, biofuels, biochemical and other bioproducts.

Solar

Nova Scotia receives an average of over 1,000 kWh of solar

irradiation per metre squared per year. If harnessed, solar energy could contribute significantly to the energy mix of Nova Scotia. Statistics from Natural Resources Canada (NRCan) show that Solar Photovoltaics do have a comparably high potential in the region. Cities like Halifax and Amherst have greater solar potential than Germany at large, which is generally accepted as the international leader in solar technology and solar exports.

You'll be in good company when you choose Nova Scotia, Canada. We are home to world-class companies in wind, tidal and renewable energy.

Green Power Labs

CarbonCure Technologies

Composites Atlantic

Daewoo Shipbuilding & Marine Enterprises Trenton (DSTN)

Enercon Canada Inc.

Fundy Tidal Inc.

LED Roadway Lighting Ltd.

Nu-Air Ventilation

Seaforth Energy/Entegriy Wind Systems

Solartron Energy Systems Inc.

Surrette Battery Company

Thermo Dynamics Ltd.

NOVA SCOTIA'S POWERED UP ABOUT CLEAN TECH



NOVA SCOTIA, CANADA

Between the tides, the wind, and the sun, along with research and development capabilities, industry expertise, and quality infrastructure, there's a lot to work with.

9.5 METRES PER SECOND

Average wind speed—Nova Scotia has some of the highest winds in all of Canada

320 MEGAWATTS

Nova Scotia's installed wind power to date

COMFIT

The world's first community feed-in tariff program for small scale producers

1ST IN NORTH AMERICA

To introduce hard caps on greenhouse gas emissions

INNOVACORP DEMONSTRATION CENTRE

88 acres of brownfield to develop bioresource technology

REMEDIATION EXPERTISE

Large-scale industrial clean-up of tar ponds resulting in 240 acres of usable city space for Sydney, Nova Scotia

2,400 MEGAWATTS

The potential commercial power that can be harnessed from the Bay of Fundy

1 OF ONLY 3

Commercial tidal power plants in the world is in Nova Scotia

TIDAL ENERGY LEADER

Energy regulations allow early stage projects to connect to Nova Scotia's power grid

FORCE (FUNDY OCEAN RESEARCH CENTRE FOR ENERGY)

Canada's leading research centre for in-stream tidal energy

With resources like these, is it any wonder Nova Scotia is leading Canada in the field of clean technology? Find out more about what you can do here at nsbi.ca



According to Analytica Advisors, Canada's clean technology sector, currently an \$11.3 billion industry, has the potential to grow to \$50 billion by 2022 and represent two percent of the global market share. Clean technology could transform Canadian industrial practices if the Canadian and provincial governments legislate policies that optimize its growth. Other countries have taken notice, buying environmentally-friendly Canadian technologies that help reduce and recycle solid waste, improve efficiencies and reduce our reliance on fossil fuel and petro-products. Approximately 74 percent of Canadian clean technology companies are exporters, with 42 percent of export sales going to non-US countries. Without domestic support, Canadian clean technology companies are in danger of being bought out by international players, taking Canadian innovation and jobs with them.

While Canadian clean technology enjoys strong market diversification overseas, it struggles to compete domestically. One challenge is the price of carbon-based energy, which is relatively cheap in Canada compared to many countries. A fee on carbon that rises annually will send a market signal to invest in technologies that help reduce carbon emissions and clean up the environment.

Nova Scotia's InnovaCorp. (website presently down for maintenance) is an enterprise of the Nova Scotia government to attract, encourage, research and develop Clean Energy Technology companies in Nova Scotia. As stated on ProgressMedia.ca, "Nova Scotia has a lot to offer emerging clean technology ventures, from clean energy resources to a supportive business and policy environment," said Clifford Gross, president and CEO of Innovacorp. "Now we're adding venture capital coupled with business support services to help accelerate growth and market success for these companies."

The Atlantic Canada Opportunities Agency describes what Nova Scotia offers to clean energies industries being part of the one of the fastest growing clean-energy sectors in North America, with a substantial base of installed wind-energy capacity and has leading-edge projects in renewable biomass.

http://www.acoa-apec.ca/eng/publications/FactSheetsAndBrochures/Pages/B_CleanEnergy.aspx

It would be wise for Nova Scotia to look beyond the British Columbia made-in-Canada solution to pricing carbon. This model has good stats [Between 2008, when BC legislated a revenue neutral carbon tax, and 2010, the province's clean technology sector's sales **grew by 48 percent**. In 2012,

BC was home to 22 percent of clean technology companies in Canada.]
 but carbon fee and dividend has better. Noted here are a list of superior features of C.F. & D. as compared with the B.C. Carbon Tax compiled by CCL Halifax volunteer, Andy Blair:

CARBON FEE AND DIVIDEND	B.C. CARBON TAX
UPSTREAM fee means that only a few dozen sources need to be monitored	Thousands of sources need to be monitored.
TOTAL COVERAGE of GHG-emitting sources (close to 100%)	70% COVERAGE of GHG-emitting sources
DIVIDEND CHEQUES to all residents mean that even those who don't pay income tax (eg. the poor) benefit.	REDUCED INCOME TAX RATE means that low income citizens who don't pay income tax don't benefit.
MORE FREQUENT DIVIDEND payments mean that low-income families don't have to carry increased costs all year	INCOME TAX REDUCTIONS mean that citizens must wait until they do their income tax returns for reimbursement.
NOT A TAX since the government doesn't keep any of the fee.	Government has to spend more to create a bureaucracy to administer and monitor the many sources.

Between 2008, when BC legislated a revenue neutral carbon tax, and 2010, the province's clean technology sector's sales [grew by 48 percent](#). In 2012, BC was home to 22 percent of clean technology companies in Canada. If Nova Scotia implemented a superior Carbon Fee and Dividend, similar results would occur, perhaps even more so because the cost of living in Nova Scotia is less than in B.C.

Supporting Nova Scotia's Agriculture Sector

Agriculture plays an important role in Nova Scotia's economy contributing to 3 % of Nova Scotia's GDP and 11% of its employment. [Agriculture and Agri-Food Canada 2008]. In a thesis by Emma Lee Adlakha presents how climate change will affect the optimal range of temperature and precipitation for crops and livestock production by affecting two determining factors—soil quality and water present—in agricultural success.

http://economics.acadiau.ca/tl_files/sites/economics/resources/Theses/EmmaAdlakhaThesis.pdf

and offers potential climate-friendly solutions. Through effective land restoration practices that improve soil productivity, Nova Scotia's agriculture sector could play a major role in [sequestering CO2](#).

In a landmark paper by the Ecology Action Centre, "Is Nova Scotia Eating Local?" every aspect of the transportation costs of importing food from afar and the cost of that on climate change was uncovered. A vast amount and quality of research went into this study and it is well worth the read. A rising fee on fossil fuels will increase the cost of food (as has been seen from the last five- seven years when food costs have increased two and a half times).

https://www.ecologyaction.ca/files/images-documents/file/Food/FM%20July4%20_final_long_report.pdf

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As well, a rising fee on fossil fuels as they enter the provincial market will

send a price signal to farmers to adopt practices and innovations that reduce their reliance on fossil fuels.

In a [2014 study](#) on the effect of BC's carbon tax on the province's agriculture sector, the authors found "little evidence that the carbon tax was associated with any statistically significant effects on agricultural trade or competitiveness from 2008-2011, despite the sector being singled out as 'at risk' by the provincial government."

Carbon Fee and Dividend will benefit farmers in a number of ways. The rising fee will increase the incentive to lower their greenhouse gas emissions, and lease land for wind turbines. Solar farms can also replace cropland that doesn't generate enough income from traditional farming. Farmers will also receive dividend cheques that they can use to help pay for these innovations.

Public Support

While Stephane Dion's failed Carbon Shift is often cited as a reason for politicians to avoid carbon taxes, the temperature is changing regarding public acceptance.

BC's former premier, Gordon Campbell was re-elected following the introduction of the province's carbon tax, which has enjoyed strong support from British Columbians according to [polls](#). The [most recent poll](#), from Abacus Data, shows that 69 percent of Canadians feel that Canada should introduce a policy that provides a financial incentive to reduce carbon emissions over time. Fifty-nine percent would like to see increased taxes on activities and products that produce higher emissions, while 78 percent support lower taxes on activities and products that produce lower emissions.

Carbon Fee and Dividend offers Nova Scotia a solution that supports and will foster public acceptance of a carbon tax through the rising fee on fossil fuels and money returned to households through dividend cheques. Nova Scotia will also benefit from a growing clean technology sector that offers high quality jobs, stimulated by the rising fee on fossil fuels.

About Citizens' Climate Lobby

Citizens' Climate Lobby (CCL) is a growing organization of more than 250 local volunteer chapters in Canada, the U.S., and worldwide that are pressing for progressive climate legislation. Currently, CCL citizen

volunteers lobby representatives to support the carbon pricing mechanism, Carbon Fee and Dividend, and to end subsidies to fossil fuel companies.

The former puts a direct fee on carbon-based fuels at the source, providing a market signal to invest in clean energy technology, while returning the fee's revenue to citizens in the form of regular payments. CCL was founded in 2007 in the U.S. by Marshall Saunders, a recipient of the Grameen Foundation Humanitarian Award.

To learn more, visit: citizensclimatelobby.ca