



Climate Policy and Rural Canada

A Tale of Three Cities

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EXECUTIVE SUMMARY

The government of Canada's commitment to reduce greenhouse gas (GHG) emissions includes efforts to reduce emissions from 1,600 emissions-intensive facilities across Canada. Many are in small cities and towns in rural Canada. The purpose of this paper is to describe how current federal policies may affect those plants, with special focus on three eastern Canadian rural communities.

This Canadian carbon dioxide pricing system operates differently across the country. Under the Canadian government's "backstop" regime, which applies in Alberta, Saskatchewan, Manitoba, Ontario, New Brunswick, Prince Edward Island and Newfoundland and Labrador, there are two key elements:

- A carbon dioxide tax, or levy, applied to emissions resulting from consumption of fossil fuels; and
- An output-based pricing system for industrial facilities that emit above a certain threshold, with an opt-in capability for smaller facilities with emissions below the threshold.

The output-based pricing regime imposes emissions restrictions on industrial facilities that emit 50 kilotonnes (kt) or more of carbon dioxide equivalent per year. Large emitters only pay the levy on their emissions above a threshold.

The government claims that this complex system will provide an important incentive to reduce emissions. In fact, the effect of the system will vary significantly among industries and among the facilities in a given sector. The marginal cost of the carbon charge imposed on a firm will be determined by the emissions-intensity of its facilities, by their performance compared to other firms in the same industry, and of course by the rate of the carbon tax. The firms with the highest marginal emissions will face the highest competitiveness risks. It is not possible to know in advance which firms will face the highest charges, as the emissions-intensity standards have not been set and data is not publicly available about the marginal emissions production or costs of the many covered firms. The Quebec emissions trading system will have similar effects.

I selected three facilities that play a large role in the economies of the communities in which they operate and are in industries highly vulnerable to international competition. The three are the Iron Ore Company of Canada Carol Project in Labrador City, Newfoundland and Labrador; the Graymont New Brunswick Inc. plant in Havelock, New Brunswick; and the Alouminerie Alouette aluminum plant at Sept-Iles, Quebec.

Labrador City has a population of just under 10,000 people and neighbouring Wabush has another 2,000. The city is located in a fairly remote area on the Labrador/Quebec border. The iron ore plant is one of the largest emitters of greenhouse gases in the province, with annual emissions of 992,666 tonnes in 2017. It is by far the largest employer in the region.

If the plant were to close, it would probably make the associated railway system uneconomic and thus force it to close as well. There are no other significant resource development or employment opportunities in the immediate region, so closing the plant would largely turn Labrador City and Wabush into ghost towns.

Graymont Ltd. is the third largest lime-producing company in North America. It is the leading supplier of lime and limestone products throughout the Maritime provinces and the State of Maine. Havelock is a rural village in central New Brunswick, 45 km west of Moncton, with a population less than 50. The Graymont plant produced 76,403 tonnes of carbon dioxide equivalent in 2017. The closing of the Graymont plant would not have major direct employment effects, but it would have a large impact on the other firms in Atlantic Canada that rely upon the plant for limestone supplies, requiring them to seek alternative supplies at higher costs from more distance sources.

Alouminerie Alouette is an aluminum manufacturing company based in Sept-Iles. It is the largest primary aluminum smelter in the Americas. The company generates about \$440 million per year into the provincial economy. Sept-Iles is a city with a population of about 26,000.

In 2017, Alouminerie Alouette was the third largest emitter of GHGs in Quebec, with total emissions of 1,156,400 tonnes of carbon dioxide equivalent in 2017. If this plant closed, it would deal a sharp blow to the income and employment of eastern Quebec, a region with few other large investment prospects.

The three plants all sell their products in domestic and export markets in competition with others, mainly in the United States. The competing plants in the U.S. and other countries, for the most part, will not incur similar carbon dioxide taxation expenses, as the governments do not plan to impose regimes similar to the Canadian one. Consequently, for competitive reasons, the Canadian plants will not be able to raise their prices to recover the higher taxation costs

In October 2019, the Conference Board of Canada published a report entitled *Tipping the Scales*, an analysis of the effects of Canada's current carbon dioxide taxation regime on the competitiveness of Canadian industries and of the potential for "carbon leakage" affecting emissions-intensive industries. The Conference Board found that, even at the tax rates that will apply in the period to 2022, the incremental costs have the potential to displace about \$10 billion of Canada's GDP and reduce employment by 48,400 jobs among the emissions-intensive industries and their suppliers. This will have disproportionate impacts in the Prairies and Atlantic Canada.

There is a bitter irony here. Much of the opposition to the globalization of trade in Canada and other western countries has been due to the adverse effects of increased imports on our industries and the people they employ. Yet, many of the same groups that most criticize the effects of economic globalization strongly support the consequences of Canada pursuing global climate objectives through policies that will place our remaining industries at risk.

CLIMATE POLICY AND RURAL CANADA – A TALE OF THREE CITIES

The government of Canada's commitment to reduce greenhouse gas (GHG) emissions as part of its climate change mitigation policy has had a major adverse impact on the resource industries of Alberta and Saskatchewan. Those, however, are only some of the 1,600 emissions-intensive industries that are the targets for major emissions reduction across Canada. Many of the others are in small cities and towns in rural Canada. The purpose of this paper is to describe how current federal policies, especially the carbon dioxide pricing regime, may affect emissions-intensive plants across Canada. It will also identify three eastern Canadian rural communities that are among those most vulnerable, and therefore may close in future, as a result of intensifying emissions reduction.

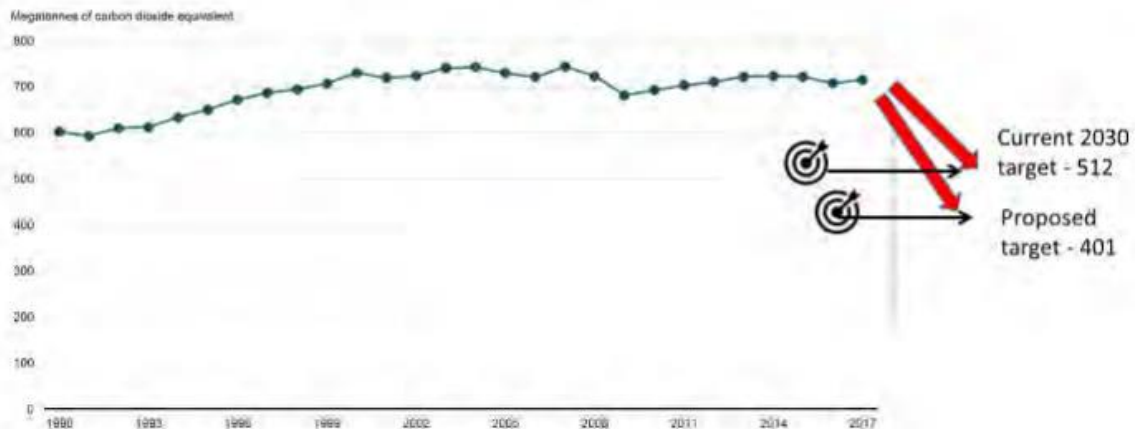


Havelock, New Brunswick Source: <https://youtu.be/xBM4yWJ1xto>

The Canadian Climate Policy and Regulatory Context

The government of Canada's political commitment is to reduce national emissions by 30 per cent from 2005 levels by 2030. It has publicly endorsed the goal of reducing emissions much more by 2050 and beyond. Canada's emissions were 716 million tonnes of carbon dioxide equivalent in 2017. They have risen steadily since 1990, only declining in the aftermath of the global financial crisis. To reach the 2030 target, they would have to fall by 204 million tonnes, an unprecedented amount. In 2017, emissions for industry other than oil and gas in 2017 were about 10 per cent of the total.

Past Canadian Emissions and Future Targets



Source: Environment Canada. Canada's emissions since 1990. (GHG reduction targets added)

The federal government now has over 300 policies, programs, subsidies, tax measures and regulations to reduce GHG emissions in all sectors of the economy on which it reports biannually to the United Nations. The provincial governments have at least another 300 more. The effects of these measures on emissions-intensive industry outside of oil and gas are largely indirect, in that they may affect consumers' buying behavior or the costs of certain raw materials. An important exception is the carbon dioxide pricing system.

This system operates differently across Canada. Under the Canadian government's "backstop" regime, which applies in Alberta, Saskatchewan, Manitoba, Ontario, New Brunswick, Prince Edward Island and Newfoundland and Labrador, there are two key elements:

- A carbon dioxide tax, or levy, applied to emissions resulting from consumption of fossil fuels; and
- An output-based pricing system for industrial facilities that emit above a certain threshold, with an opt-in capability for smaller facilities with emissions below the threshold.

The federal carbon dioxide levy is now \$20 per tonne (2019). Its rate will rise to \$50 per tonne in 2022. The rate of the levy has not yet been set for the years that follow, but analysis published by Environment and Climate Change Canada (ECCC) makes it clear that the 2030 emission reduction target will not be met with a carbon dioxide levy of \$50 per tonne. The Parliamentary Budget Office estimates that the levy will have to rise to at least

\$102 per tonne by 2030 to meet the target.¹ Other organizations, including ECCC, are projecting increases of up to \$300 per tonne before 2050.²

The output-based pricing regime imposes emissions restrictions on industrial facilities that emit 50 kilotonnes (kt) or more of carbon dioxide equivalent per year. Large emitters only pay the levy on their emissions above a threshold.

This threshold will be set in a fairly complex way. ECCC will establish by regulation an emissions intensity standard for each type of industrial activity, based on the department's assessment of the technology available to reduce emissions. All firms will be grouped by industry or sub-industry and their emissions intensity (emissions per unit of output) will be calculated by facility. ECCC will calculate the emissions intensity across all emitters in the group and then multiply that intensity by a threshold parameter (0.9 currently). Facilities in the system that emit more than the relevant emissions-intensity standard must submit "compliance units" or pay the levy equivalent to make up the difference.

The government claims that this complex system will provide an incentive to reduce emissions and a "rebate" when some facilities significantly exceed the prescribed emissions standard. **In fact, the effect of the system will vary significantly among industries and among the facilities in a given sector. The marginal cost of the carbon charge imposed on a firm will be determined by the emissions-intensity of its facilities, by their performance compared to other firms in the same industry, and of course by the rate of the carbon tax. The firms with the highest marginal emissions will face the highest competitiveness risks.**

It is not possible to know in advance which firms will face the highest charges, as the emissions-intensity standards have not been set and data is not publicly available about the marginal emissions production or costs of the many covered firms.

The government of Newfoundland and Labrador negotiated an agreement with the government of Canada to implement, effective January 1, 2019, a hybrid approach to the use of carbon pricing. The approach includes the use of performance standards for large industrial facilities and large scale electricity generation, and imposition of a carbon tax on transportation building fuels, electricity generation and other fuels combusted in the province. The carbon tax coverage includes about 33% of emissions and the performance standards cover only about 43% of the emissions. To ensure compliance with the performance standards, firms will be required to pay fees equal to the federal carbon tax rates for any emissions that exceed the standard. Some provincial fuel taxes will be eliminated and replaced by comparable federally-mandated carbon taxes.

¹ *Closing the Gap: Carbon pricing for the Paris target*. Office of the Parliamentary Budget Officer, Ottawa, June 13, 2019.

² <https://nationalpost.com/news/politics/secret-briefing-says-up-to-300-per-tonne-federal-carbon-tax-by-2050-required-to-meet-climate-targets>

In Quebec, the province uses an emissions trading (cap and trade) system, under which it imposes limits on the consumption or sale of fossil fuels (oil, natural gas and coal), requires the companies covered by the regime to acquire (usually by purchase) the permits corresponding to their limits, and allows trading of permits among companies so that those that can reduce emissions more cheaply can do so and sell the surplus credits to other companies. In such a system, the price that a company pays for a permit is theoretically determined by trading (i.e. market supply and demand), but this is heavily influenced by government policy, including notably how stringent the emissions goals are, the issuance of free permits to some companies, and the cost of emissions reduction among the companies operating within the emissions trading area. The government of Canada, however, has established a policy that the price of permits in the provincial emissions trading systems must be generally similar to the value of the carbon dioxide levies. Thus, over time, the cost of permits under the emissions trading systems should be roughly equal to the rates of the carbon dioxide levies.

In summary, while the systems imposed by governments to raise the cost of emissions vary by province, the general objectives remain the same and the costs imposed on consumers, including energy-intensive plants, will be generally the same, rising at the rates determined by federal government policy and ECCC regulation for the indefinite future.



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Three Plants in Three Communities

To examine the potential effects of federal carbon dioxide pricing, I used ECCC data on the largest industrial emitters by province in 2017. From this list, I selected three facilities that play a large role in the economies of the communities in which they operate and are in industries highly vulnerable to international competition. The three selected are the Iron Ore Company of Canada Carol Project in Labrador City, Newfoundland and Labrador³; the Graymont New Brunswick Inc. plant in Havelock, New Brunswick⁴; and the Aluminerie Alouette aluminum plant at Sept-Iles, Quebec.⁵

Iron Ore Company of Canada, Labrador City

The Iron Ore Company of Canada is a Canadian-based producer of iron ore. It is now owned by a consortium of Rio Tinto and Mitsubishi. While based in Montreal, the company has mining and concentrator operations in Labrador City and operates the Quebec North Shore and Labrador Railway to ship iron ore concentrate from the mines to the port of Sept-Iles.

Labrador City has a population of just under 10,000 people and neighbouring Wabush has another 2,000. The city is located in a fairly remote area on the Labrador/Quebec border. The population is largely Francophone but with substantial Filipino and aboriginal minorities.



Source: https://www.tripadvisor.co.za/LocationPhotoDirectLink-g154962-i17803310-Newfoundland_and_Labrador.html



The iron ore plant is one of the largest emitters of greenhouse gases in the province, with annual emissions of 992,666 tonnes in 2017. It is by far the largest employer in the region. If the plant were to close, it would probably make the associated railway system uneconomic and thus force it to close as well. There are no other significant

³ <https://labradorwest.com/work/why-do-business-here/>

⁴ <https://www.graymont.com/en/locations/lime-plants/eastern-canada/lime-plant/havelock>

⁵ <https://www.alouette.com/en>

resource development or employment opportunities in the immediate region, so closing the plant would largely turn Labrador City and Wabush into ghost towns.

Graymont, New Brunswick Havelock Plant

Graymont Ltd. is a privately-owned Canadian corporation, and the third largest lime-producing company in North America. The Havelock plant typically produces between 300,000 and 400,000 tons of limestone as well as lesser amounts of high magnesium limestone every year. It is the leading supplier of lime and limestone products throughout the Maritime provinces and the State of Maine.

Havelock is a rural village in central New Brunswick, 45 km west of Moncton. The population is less than 50. The labour force serving the Graymont plant is drawn from the surrounding rural area.



Graymont, Havelock Plant, New Brunswick

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Source: http://magnificentrocks-rochsmagnifique.ca/image-eng?p=assets/uploads/galleries/Lower_Carboniferous_12/LC45.jpg&id=1221&returnID=206

The Graymont plant produced 76,403 tonnes of carbon dioxide equivalent in 2017, making it large enough to qualify as a large industrial emitter under Canada's regime. **The closing of the Graymont plant would not have major direct employment effects, but it would have a large impact on the other firms in Atlantic Canada that rely upon the plant for limestone supplies, requiring them to seek alternative supplies at higher costs from more distance sources.**

Alouminerie Alouette Plant in Sept-Iles

Alouminerie Alouette is an aluminum manufacturing company based in Sept-Iles, on the north shore of the Gulf of St. Lawrence. With production of about 500,000 tonnes of aluminum per year, it is the largest primary aluminum smelter in the Americas. The smelter was funded by an international consortium consisting of Austria Metall AG, Kobe Aluminum and Marubeni of Japan, Koninklijke Hoogovens of the Netherlands, Société générale de financement (SGF), and VAW of Germany.



Alouminerie Alouette Source: Wikipedia

By Harfang - Own work, CC BY 3.0, <https://commons.wikimedia.org/w/index.php?curid=7959042>



The company generates about \$440 million per year into the provincial economy. Its operations provide work for local subcontractors in areas such as cargo loading and unloading, snow removal, industrial cleaning, maintenance and security.

Sept-Iles is a city with a population of about 26,000. It is among the northernmost locales with a paved connection to the rest of Quebec's road network. In addition to the Alouminerie Alouette, Sept-Iles has two major iron ore plants, the Iron Ore Company of Canada and Cliffs Natural Resources.

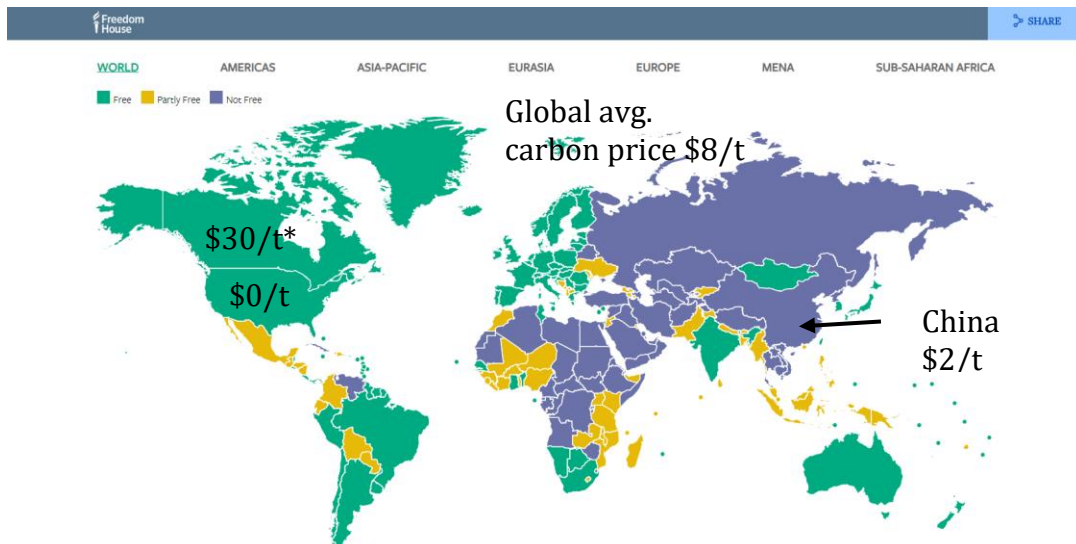
In 2017, Alouminerie Alouette was the third largest emitter of GHGs in Quebec, with total emissions of 1,156,400 tonnes of carbon dioxide equivalent. If this plant closed, it would go a long distance towards meeting federal and provincial emission reduction targets in Quebec. It would also deal a sharp blow to the income and employment of eastern Quebec, a region with few other large investment prospects.



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Vulnerability

To understand the vulnerability of these plants and communities to the adverse effects of carbon dioxide taxes and other climate policies, one should consider their exposure to higher costs, their probable costs of “compliance” (making emissions reductions investments), and their exposure to competition from plants in other countries. The three plants all sell their products in domestic and export markets in competition with others, mainly in the United States. The competing plants in the U.S. and other countries, for the most part, will not incur similar carbon dioxide taxation expenses, as the governments do not plan to impose regimes similar to the Canadian one. Consequently, for competitive reasons, the Canadian plants will not be able to raise their prices to recover the higher taxation costs.



Source of Map: <https://freedomhouse.org/report/freedom-world/freedom-world-2018>

*\$30/t reflects 2020 federal rate

Absent information on the emissions intensity standards that ECCC will apply and the comparative marginal emissions intensities of the plants, it is not possible to estimate the actual cost impact of the carbon dioxide levies and the output-based pricing system.

Assessment by Canadian Think Tanks

In October 2019, the Conference Board of Canada published a report entitled *Tipping the Scales*, an analysis of the effects of Canada's current carbon dioxide taxation regime on the competitiveness of Canadian industries and of the potential for "carbon leakage" affecting emissions-intensive industries. Carbon leakage is the term used by analysts of climate change policies to describe the movement of firms' investment and economic activity and the related greenhouse gas emissions (GHGs) out of a country when climate policies make it less economic for them to continue operating in the country imposing the policies. When emissions "leak" or are displaced to other jurisdictions, the effect may actually be to increase global emissions. The full text of the report can be found here:

<https://www.conferenceboard.ca/e-library/abstract.aspx?did=10485>

The study looked at the projected effects of carbon dioxide taxes over the period 2018 to 2022. It did not examine the higher compliance costs or the higher losses due to foreign competition that would result from carbon dioxide taxes at \$50 per tonne or at the much higher tax rates that may be imposed over the period to 2030 and beyond. **Even so, the potential for "carbon leakage" is quite large. This is especially the case for Canada's non-ferrous metal manufacturing facilities, such as aluminum smelters and chemicals; natural gas production; some oil sands production; chemicals and petrochemicals; and electricity exports from provinces that rely largely on fossil fuel generation.**

Companies that are both emissions-intensive and trade-exposed (i.e. vulnerable to loss of sales from foreign competition) are a key source of carbon leakage.



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The Conference Board found that, even at the tax rates that will apply in the period to 2022, the incremental costs have the potential to displace about \$10 billion of Canada's GDP and reduce employment by 48,400 jobs among the emissions-intensive industries and their suppliers. This will have disproportionate impacts in the Prairies and Atlantic Canada.

In terms of emissions reduction, the Conference Board estimates that at the \$30 per tonne rate, GHG emissions in Canada would drop by 19 million tonnes of carbon dioxide equivalent. However, the report states:

“This is not the best way for emissions reductions in Canada to be achieved, as they come at a very high cost. It is worth noting that these reductions are estimated before considering any potential leakages. So, the net reduction in global GHG emissions is likely lower and could result in an actual increase in some cases.”

The Fraser Institute also conducted a similar study of the potential effects of carbon dioxide taxation on the competitiveness of Canadian industries. The study, published in April 2019, can be found here:

<https://www.fraserinstitute.org/studies/impact-of-the-federal-carbon-tax-on-the-competitiveness-of-canadian-industries>

The Fraser Institute study concluded that the economic sectors whose competitiveness would be most adversely affected are petroleum and coal product manufacturing (i.e. petrochemicals) and basic chemical manufacturing, but that the most affected sectors would also include primary metal manufacturing, cement and concrete product manufacturing, non-metallic metal manufacturing, and pulp and paper. **It concluded that 13 industries that account for 7.3% of GDP are exposed to competitiveness pressures and thereby carbon leakage (i.e. the flight of capital or operations to other jurisdictions) in the short run.**

“The reality is that a \$50 per tonne carbon tax will fall disproportionately heavily on capital-intensive sectors and therefore we expect to see investors shift capital allocations from Canada to the United States. This movement of capital from Canada to the United States has the potential to counteract reductions in greenhouse gas emissions globally and has far-reaching effects on future economic growth. It is time for policy makers to acknowledge that a \$50 per tonne carbon tax comes with serious competitiveness risks for many energy-intensive Canadian industries that are integral to Canada’s economy.”

Comments

The conclusions of the Conference Board of Canada and the Fraser Institute about the risks associated with the imposition of carbon dioxide pricing in the period to 2022 take on higher significance considering the likelihood that such taxes will be doubled and perhaps quadrupled in the next decade.

Because of the complexity of the output-based pricing system and the absence of information about the emissions intensity and marginal costs of the three facilities highlighted in this article, it is not possible to state with certainty whether or not they will survive to continue to operate in Canada.

Some might argue that the provincial governments of Newfoundland and Labrador, New Brunswick and Quebec, faced with the probable closing of economically important facilities in regions with few or no other opportunities, would choose instead to implement “policy measures” to allow them to continue to operate. In practice, this would mean providing taxpayer subsidies large enough to offset the adverse effects of the carbon dioxide pricing regime. The subsidies would have to go on indefinitely, constantly increasing as the carbon dioxide levy rates increase; in doing so, they would allow the plants to continue but defeat the purpose of the tax. In addition, if such subsidies were provided to some facilities and not to others, they would create inequities across industries. There could be endless opportunities for discretionary decisions based on politics and bureaucratic overreach.

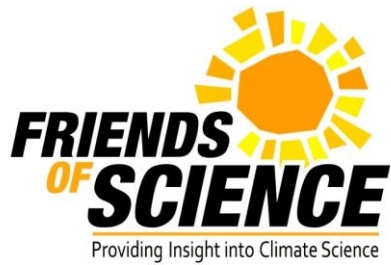
The inevitable effect of the carbon pricing system will be to raise the costs of operation of many facilities located in rural and remote communities that rely heavily on the income and employment provided. The federal government’s output-based pricing system objective of reducing emissions can be achieved by two methods – either by forcing improvements in emissions-intensity or by driving facilities to move their operations out of Canada. The higher the emissions reduction goal and the larger the disparity between the costs of operating in Canada and elsewhere, the more appealing will be the option of moving capital elsewhere.

There is a bitter irony here. Much of the opposition to the globalization of trade in Canada and other western countries has been due to the adverse effects of increased imports on our industries and the people they employ. Yet, many of the same groups that most criticize the effects of economic globalization strongly support the consequences of Canada pursuing global climate objectives through policies that will place our remaining industries at risk.

Politically, many Quebecers and some Atlantic Canadians have reacted with indifference to the damage being inflicted by climate policies on the western Canadian oil and gas industry. One wonders how they may react when the same policies harm their emissions-intensive industry, and economic sacrifice comes to town.



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About the Author

Robert Lyman is an Ottawa energy policy consultant and former public servant of 27 years, a diplomat for 10 years prior to that. His complete biography can be read [here](#).

About

Friends of Science Society is an independent group of earth, atmospheric and solar scientists, engineers, and citizens who are celebrating its 16th year of offering climate science insights. After a thorough review of a broad spectrum of literature on climate change, Friends of Science Society has concluded that the sun is the main driver of climate change, not carbon dioxide (CO₂).

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