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## Fostering a conversation on stronger carbon pricing in Alberta

by Amin Asadollahi and Matt Horne | Pembina Institute

British economist Lord Nicolas Stern has noted that “climate change presents a unique challenge for economics: it is the greatest example of market failure we have ever seen.” Putting an effective price on carbon pollution is one of the best ways to correct this failure while capitalizing on the flexibility and efficiencies afforded by the market. An increasing number of industry players, environmental organizations and economic institutions are also recognizing this fact and calling on governments to put an effective price on carbon.

Most recently, 43 CEOs across 20 economic sectors — with operations in 150 jurisdictions and \$1.2 trillion in revenue in 2014 — called for an explicit or implicit price on carbon as part of their vision of a global climate deal.<sup>1</sup> Similarly, Europe’s largest oil and gas companies — while accepting cost implications — jointly called on governments to price carbon in order to provide “a clear roadmap of future investment, a level playing field for all energy sources across geographies and a clear role in securing a more sustainable future.”<sup>2</sup>

An increasing number of national and subnational governments are adopting carbon pricing — such as a carbon tax/levy or cap-and-trade policies — to reduce emissions and guide investment decisions (Figure 1). This trend is likely to continue and jurisdictions with strong policies will be better positioned to compete in a changing world.

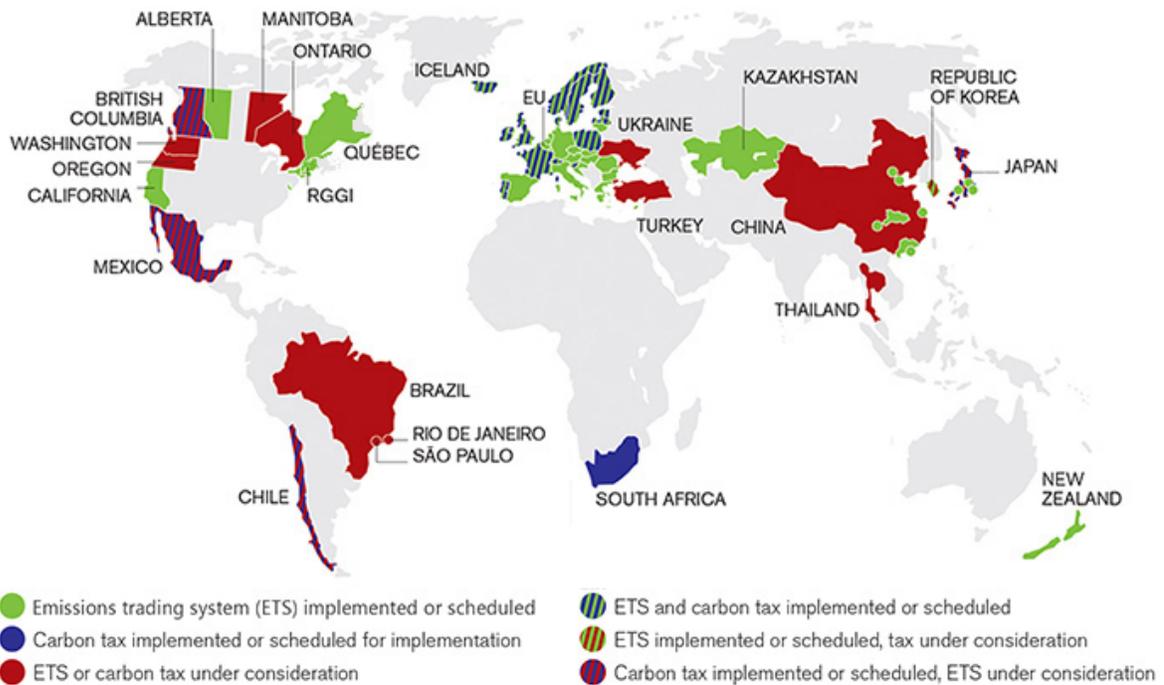


Figure 1. Existing and potential carbon pricing instruments across jurisdictions

Source: World Bank<sup>3</sup>

## How could Alberta better align its carbon pricing policy with global trends?

Three challenges — seemingly from different directions — confront Alberta. The province is damaging its reputation by not being seen to do enough to fight climate change, the economy lacks the diversity and innovation needed to succeed in a rapidly changing world, and the delivery of government services is too dependant on highly variable resource revenues. A meaningful, economy-wide and incrementally increasing carbon price could help solve all three challenges by reducing carbon pollution, encouraging economic diversification and raising revenue.

While Alberta was the first jurisdiction in North America to put a price on carbon in 2007 through the province's Specified Gas Emitters Regulation (SGER), that policy hasn't been strong enough to effectively reduce carbon pollution — which continues to escalate. Despite recent changes to the SGER, the policy continues to have limited coverage and remains weak relative to B.C.'s carbon tax and Quebec and California's cap-and-trade system.

Alberta could make progress on these challenges using the B.C. or Quebec approach. We recommend the government of Alberta apply an economy-wide price on carbon. A pre-set price on carbon pollution that increases incrementally over years is a policy that is simple to design. It can be implemented relatively quickly and would provide regulatory certainty over the long term.

### The basics

#### How could an economy-wide price on carbon work in Alberta?

Carbon levies are a relatively simple policy. Experience in B.C. shows a similar policy could be designed and implemented in about six months.

This policy could set an initial price below the real cost of carbon. The price signal — in itself — can act as a powerful market tool to drive emission reductions and investments in clean energy. The price should incrementally increase over time to match the real cost impact of carbon on the environment. This approach would give industry and households time to plan.

***The Pembina Institute recommends Alberta set a schedule of rates starting at least \$40 per tonne, increasing \$10 a year over the first 10 years of the policy.***

Next, the government should choose the sources of carbon pollution to price. This selection should be as broad as possible in order to reduce carbon pollution across more of the economy.

Carbon levies are best applied and collected at points that are simple to administer. For example, B.C.'s carbon tax is charged to gasoline and natural gas distributors instead of trying to collect it at the pump or house by house.

Once the carbon levy is in place, households and businesses can determine the response that makes the most sense to them. They have an incentive to use energy more efficiently and switch to cleaner sources of energy — but the choice is ultimately up to them.

#### How much revenue could it collect?

Based on 2013 emissions, a \$40 per tonne price on carbon pollution in Alberta would have generated an estimated \$9 billion — equivalent to about 19 per cent of the Government of Alberta's 2013 revenues. This preliminary revenue estimate is based on a price on carbon being applied to all sources of carbon pollution that can be accurately measured — about 85 per cent of Alberta's carbon pollution.<sup>4</sup>

Any future revenue projections depend on whether the price on carbon is further strengthened and how the economy responds to that price as well as other external factors. For example, if Alberta had a lower-emissions electricity grid like Ontario — which has already phased out coal — the \$9 billion would drop to about \$7 billion.

An additional complexity not accounted for in the above estimates is the interaction between carbon levies, corporate taxes and royalties. Under current rules, a price on carbon can be accounted for as an expense, resulting in lower corporate income taxes and royalty payments.

## What could the revenue be used for?

As with any provincial revenues, the government must carefully decide how to invest in ways that best meet the needs of Alberta. Possibilities — which are not mutually exclusive — include:

- A dividend paid to every Albertan and/or reducing other taxes.
- Investing in renewable energy, energy efficiency and clean transportation systems to help Albertans reduce their carbon pollution.
- Reducing deficits to allow the government to maintain core government services — such as health care and education — and to invest in infrastructure.
- Protecting low-income Alberta households from potential adverse impacts of higher energy costs.
- Protecting the competitiveness of Alberta industries that could be placed at a material disadvantage because of increasing carbon prices.

## The bigger picture

### What would it mean for Alberta's economy?

By providing a consistent incentive across the economy, a price on carbon pollution encourages the implementation of the most cost-effective opportunities. In contrast, regulations that don't offer the same flexibility can end up mandating higher cost solutions. According to Canada's Ecofiscal Commission, if Alberta used economy-wide carbon pricing to achieve its 2020 climate target it could improve GDP by 6.5 per cent as compared to an approach relying on inflexible regulations.<sup>5</sup>

Industries with lower carbon intensities should also be more competitive in a world that is becoming more selective in the fossil fuels it purchases. Policies like the low-carbon fuel standards in BC and California require cuts in the carbon intensity of transportation fuels being sold there. An effective and widely-credible policy for reducing greenhouse gas emissions would help Alberta's exporters get ahead of the compliance curve for emerging standards such as those in place in California and B.C.

Perhaps more importantly in the medium to long-term, a price on carbon would also create space for Alberta's low carbon and clean energy sectors to grow.<sup>6</sup> This would ultimately result in a more diverse economy and an energy supply that is better able to ride fossil fuel price volatility and looming carbon constraints.

### What would it mean for Alberta's reputation?

Alberta's relatively weak climate change strategy has been criticized at home and abroad, damaging the reputation of the province and its energy sector. The oilsands in particular have been singled out for being a carbon-intensive source of oil and for being the fastest-growing source of carbon pollution in Canada. A carbon levy could help to address some of these criticisms by strengthening climate policy in the province. It will also better position Alberta's energy sector to prepare for a world that is increasingly pricing carbon pollution and moving toward lower-carbon energy pathways. B.C.'s carbon tax has earned praise from within the province and from respected international bodies such as the World Bank and OECD.

### What would it mean for Alberta's carbon pollution?

The effectiveness of a carbon levy will be determined by the schedule of prices and the coverage. The higher the price goes over time and the broader its application the more effective the policy will be in

reducing carbon pollution. Even with its relatively low rate, B.C.'s carbon tax has produced some encouraging early results. Per capita fossil fuel use in B.C. declined by 16.1 per cent from 2008 through 2013 while the same metric rose by over three per cent in the rest of Canada.<sup>7</sup> One estimate suggests there are 15 million tonnes of reductions available in Alberta at costs of less than \$50 per tonne.<sup>8</sup>

## The Challenges

### What about the Specified Gas Emitters Regulation?

Alberta's current intensity-based regulatory approach — SGER — does not provide a strong incentive to reduce carbon pollution because the effective price on carbon is quite low. As a result, nearly 90 per cent of compliance has come through offset purchases and payments into the province's technology fund rather than through facility emission intensity improvements.<sup>9</sup> An economy-wide price on carbon would be a more effective policy and could immediately replace the SGER. If the government wanted to preserve the technology fund and offset system it could do so through other means — such as using a portion of price on carbon revenues to maintain the fund and/or invest in offsets. The government should revisit the requirements for these two compliance mechanisms and — in particular — set a limit on the use of offsets.

### What would be the impact on low-income Albertans?

One of the concerns about a price on carbon is that it can have a negative impact on low-income households because energy costs make up a larger share of their budgets. They also don't benefit significantly from broader cuts to personal income taxes — an approach sometimes used with carbon levy revenue — because they already pay little to no income tax.

B.C. uses a portion of its carbon tax revenue to provide a low-income tax credit — currently \$115.50 per adult and \$34.50 per child. In total, provincial investment in the low-income climate action tax credit is \$194 million — or 16 per cent — of the \$1.2 billion collected in carbon tax revenue. Recent analysis found that B.C.'s carbon tax was highly progressive because of the combined impact of the low income tax credit and other income tax reductions.<sup>10</sup>

A preliminary estimate of equivalent annual rebates in Alberta would be \$200 per person and \$60 per child. The total value would be approximately \$260 million — or four per cent — of the \$6.8 billion generated from a \$30 per tonne carbon levy. Adjusting B.C.'s credits to reflect Alberta's per capita carbon pollution levels and income distribution derived these estimates.

### What would it mean for industry competitiveness?

High carbon prices have the potential to place companies at a disadvantage relative to competitors in jurisdictions with lower carbon prices. This is particularly true for companies that are carbon-intensive and exposed to a significant amount of trade competition. While the concern is real, it can be mitigated in a variety of ways that still help to lower the carbon intensity of Alberta's industries and the risks associated with poor environmental performance.

The government could mitigate competitiveness concerns from its carbon levy while maintaining the incentive to reduce carbon pollution by, for example:

- Starting prices at a relatively low level and increasing them over time, giving companies time to plan and make investments early.
- Investing in sectors of specific concern to help them transition to cleaner sources of energy and to have lower carbon tax payments.

Many companies operating in Alberta are already accounting for higher carbon prices in the investment decisions they are making — helping to insulate them from stronger climate change policy. For example,

Canadian energy companies — including those with operations in the oilsands — use internal shadow carbon prices of up to \$70 per tonne to assess the profitability of projects over the next several decades (Figure 2).<sup>11</sup> In other words, companies in Alberta and around the world are already making investment decisions based on the assumption that a higher carbon price is inevitable. The government can provide regulatory certainty through a more effective and longer-term price schedule.

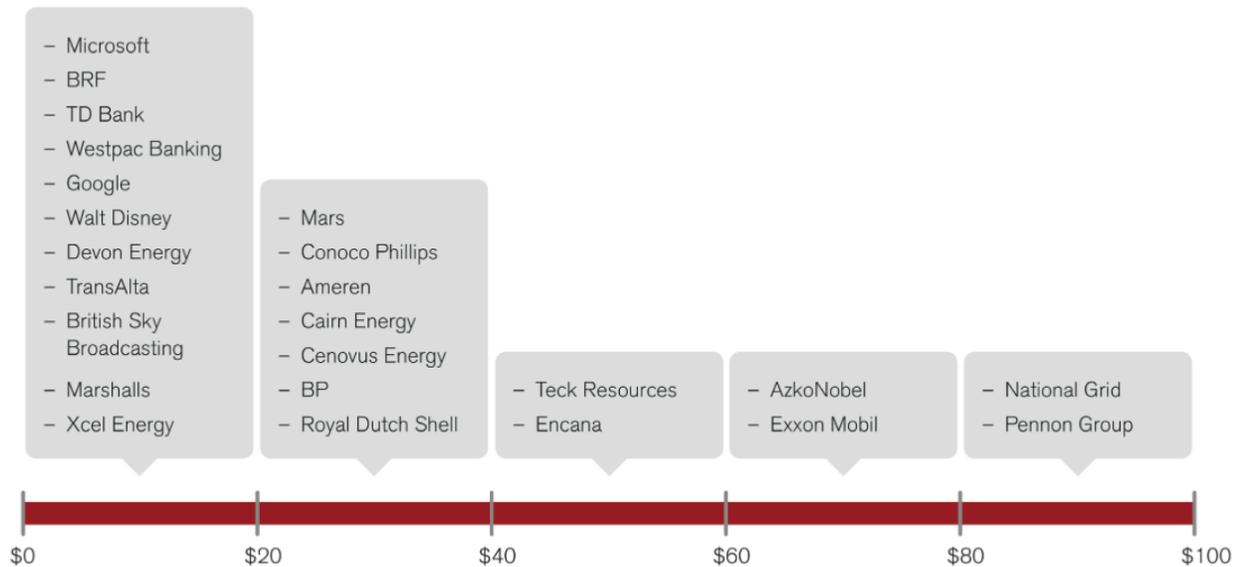


Figure 2. Average internal carbon price as disclosed to the Carbon Disclosure Project

Source: World Bank<sup>12</sup>

Oilsands is a high-cost, high-carbon source of energy. To remain competitive against lower cost sources of energy in world that is becoming increasingly carbon restrained, the oilsands sector must reduce its costs and emissions. A more effective price on carbon could do both by incentivizing improved energy use and therefore result in emission intensity improvements. According to a recent study, Alberta's current climate regulations represent less than half of a per cent of total supply costs of a typical oilsands facility. Even with a significant increase in the price of carbon, the levy would remain small relative to other project costs like fixed capital as well as operating and energy costs.

### Could the idea earn the support of Albertans?

A recent EKOS Research Associates survey found half of Albertans support an economy-wide price on carbon — with 38 per cent opposed. Support was highest when the revenues are directed to technologies that cut emissions from the oil and gas sector — 76 per cent — or infrastructure and community projects that cut emissions — 72 per cent — (Figure 3).

Please indicate if you would support or oppose a carbon tax in Alberta if the revenue was used to...

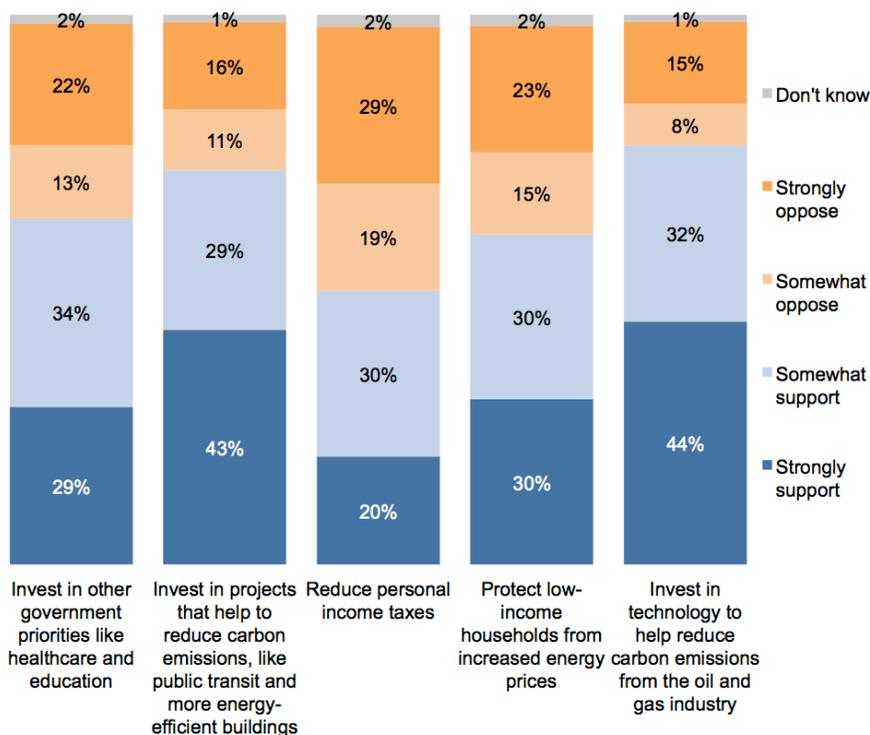


Figure 3. Albertans’ support for a carbon tax depends on how the revenue would be used

Source: EKOS Research and the Pembina Institute<sup>13</sup>

These recent findings are consistent with a seven-year series of public opinion research pieces from the Environics Institute that show an appetite for conversation about a price on carbon in Alberta at a level similar to B.C. The challenge is that a slim majority has consistently expressed opposition — with almost a third strongly opposed.<sup>14</sup> Further analysis on the motivations for that opposition and how it would shift in response to different carbon price designs and different communication approaches would be helpful.

Recent research from Nanos illustrates how responsive public opinion is to different carbon pricing approaches.<sup>15</sup> For example, 69 per cent of respondents supported additional taxes on businesses and industries that emit greenhouse gas emissions. That support dropped to 41 per cent when asked about increasing taxes on fossil fuels such as gasoline — possibly because respondents believed they would be more personally impacted by the second option.

## Endnotes

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- <sup>1</sup> Climate CEOs, “Open Letter from Global CEOs to World Leaders Urging Concrete Climate Action,” *Medium.com*, April 16, 2015. <https://medium.com/@ClimateCEOs/open-letter-from-global-ceos-to-world-leaders-urging-concrete-climate-action-e4b12689cddf>
- <sup>2</sup> Helge Lund, Bob Dudley, Claudio Descalzi, Ben van Beurden, Eldar Saetre, and Patrick Pouvanne, *Open letter to France’s Foreign Minister Laurent Fabius and Christiana Figueres, Executive Secretary of the UN Framework Convention on Climate Change*, June 1, 2015. <http://newsroom.unfccc.int/unfccc-newsroom/major-oil-companies-letter-to-un/>
- <sup>3</sup> World Bank, “Carbon Pricing Is Expanding: Initiatives Now Valued at Nearly \$50 Billion,” May 26, 2015 <http://www.worldbank.org/en/news/feature/2015/05/26/carbon-pricing-initiatives-nearly-50-billion>
- <sup>4</sup> This calculation excludes carbon pollution that isn’t accurately measurable and therefore would be difficult to tax; for example, unintended leaks of methane from the oil and gas sector.
- <sup>5</sup> Canada’s Ecofiscal Commission, *The Way Forward* (2015), 29.
- <sup>6</sup> Alberta has significant renewable energy potential, which includes 150 GW in wind power, 11 GW in hydroelectricity and 120 GW in geothermal power. It would be possible to meet Alberta’s annual electrical needs with solar panels installed over 0.26% of the province’s total land area. Accounting for the cost of carbon for power plants using fossil fuels would make renewable energy more competitive. Current wind energy’s levelized cost of electricity is as low as any other energy sources (*c.f.* James Glave and Ben Thibault, *Power to Change: How Alberta Can Green its Grid and Embrace Clean Energy*, 2014)
- <sup>7</sup> Stewart Elgie, “Just the Facts: What’s behind B.C.’s whopping fuel use drop?” *Sustainable Prosperity* (July 9, 2014). [www.sustainableprosperity.ca/blogpost97](http://www.sustainableprosperity.ca/blogpost97)
- <sup>8</sup> National Round Table on the Environment and the Economy. *Reality Check: The State of Climate Progress in Canada* (2012), 105.
- <sup>9</sup> Andrew Read, *Climate change policy in Alberta* (Pembina Institute, 2014), 6. <http://www.pembina.org/pub/climate-change-policy-in-alberta>
- <sup>10</sup> Marisa Beck, Nicholas Rivers, Randall Wigle, Hidemichi Yonezawa, “Carbon Tax and Revenue Recycling: Impacts on Households in British Columbia,” *Social Science Research Network* (September 7, 2014) <http://dx.doi.org/10.2139/ssrn.2492766>
- <sup>11</sup> Sustainable Prosperity, *Shadow Carbon Pricing in the Canadian Energy Sector* (2013) <http://www.sustainableprosperity.ca/dl1015&display>; Carbon Disclosure Project *Use of internal carbon price by companies as incentive and strategic planning tool: A white paper from CDP North America A review of findings from CDP 2013 disclosure* (2013) <https://www.cdp.net/CDPResults/companies-carbon-pricing-2013.pdf>
- <sup>12</sup> World Bank, *Carbon Pricing Watch: An advance brief from the State and Trends of Carbon Pricing 2015 report, to be released late 2015* (2015), 10. <http://documents.worldbank.org/curated/en/2015/05/24528977/carbon-pricing-watch-2015-advance-brief-state-trends-carbon-pricing-2015-report-released-late-2015>
- <sup>13</sup> EKOS Research and the Pembina Institute, *Albertans’ opinions on climate change, energy and the environment* (2015), 4. <http://www.pembina.org/pub/albertans-opinions-on-climate-change-energy-and-the-environment>
- <sup>14</sup> Environics Institute and David Suzuki Foundation, *Canadian public opinion on climate change* (2014). <http://www.environicsinstitute.org/news-events/news-events/environics-institute-and-david-suzuki-foundation-release-new-survey-on-climate-change>
- <sup>15</sup> Nanos Research, *Canada doing a poor job at trying to reduce greenhouse gases* (2015). <http://www.nanosresearch.com/library/polls/POLNAT-S15-T636.pdf>