

Evaluating Carbon Pricing Options

Purpose of this document:

Citizens' Climate Lobby firmly believes that putting a price on carbon is essential to create the incentives and economic responses needed to significantly reduce emissions and combat the risks of climate change. Since we must put a price on carbon, the relevant question is: "How?" This document compares three policy options against important criteria for deciding on a carbon pricing policy, and directs readers towards further resources. The carbon pricing policies under review cover fossil fuels only. Green house gases (GHG) from livestock and cement are not included. While carbon pricing is a complex topic, we aim to simplify the topic by focusing on clear, understandable criteria for decision-making, and certainly encourage you to learn more. Overall, this document is intended to be a succinct tool for citizens, political leaders, and policy staff alike.

Policy options definitions used:

Carbon Fee and Dividend

A policy which places an annually rising fee on each tonne of GHG emitted at the well head or when it enters the market where 100% of fees collected are returned to households as an equal monthly payment.

Carbon Tax

A tax based on GHGs generated from burning fuels. It puts a price on each tonne of GHG emitted, sending a price signal across the economy, resulting in reduced emissions. Revenues are used by government for purposes that it determines, such as paying down debt, investing in clean energy alternatives and infrastructure or other programs not related to GHG reduction.

Cap and Trade

A policy program which sets a cap, or maximum limit, on tonnes of GHG allowed to be emitted. Sources covered by the program then receive authorizations to emit in the form of emissions allowances, with the total amount of allowances limited by the cap. These sources can design their own compliance strategy to meet the overall emissions limit, including the sale or purchase of allowances, implementation of efficiency measures, or other options.

Policy Comparison

Criteria	Carbon Fee and Dividend	Carbon Tax	Cap and Trade
<p>Economic Efficiency: Does the policy achieve the greatest benefit at the lowest cost?</p>	<p>A consistent price signal lets businesses choose their own responses to reduce emissions, allowing the market to identify the most cost-effective mitigation strategies. Recycling of revenue creates more consumer buying power. In the U.S. this is analyzed to create 2.8 million jobs over 20 years.ⁱ</p>	<p>A Carbon Tax provides the incentive for innovation as emission reductions occur. However, with no or limited revenue returned to households, governments will be challenged to raise the tax. To do so would be cost prohibitive to those with lower and middle class incomes. This in turn limits the tax's effectiveness. Such a tax could also slow GDP. Governments that use the revenue to invest in clean energy alternatives will be picking winners, when that may be best left to the market.ⁱⁱ</p>	<p>The most effective Cap and Trade system requires a strong price ceiling and floor to reduce market fluctuation of trading permits. The cap should be lowered over time to incentivize emissions reductions. The cap should also be applied as upstream as possible – i.e. at the point of extraction; however it is typically applied at the industrial level. If the cap lowers industrial demand for fossil fuels, this may lower fuel prices encouraging public consumption. The danger of Cap and Trade with offsets is that it is prone to abuse. Offsets may be given to initiatives that may not need it due to strong market appeal.ⁱⁱⁱ Given the complexities of Cap and Trade systems, bureaucratic oversight is required, which can be burdensome and costly.</p>
<p>Emission Certainty: How much certainty do we have that the policy will reduce emissions?</p>	<p>This fee is applied at the point of extraction or when fossil fuels enter the market, targeting fuel producers and investors. The fee sends a signal to change their business choices. Costs are also passed down from the wholesale to retail level. Experiences in B.C.^{iv} demonstrate that a specific fee, even at retail, reduces consumption by a specific amount. For example, according to the IPCC, the demand reduction of</p>	<p>A specific tax on fossil fuels reduces consumption by a specific amount. However, such a tax is limited if it does not rise annually by at least \$10 per carbon tonne.</p>	<p>In theory, the cap sets an absolute quantity of emissions so that GHG reductions can be more certain. The cap is a statement of regulatory purpose; it has meaning only with strict enforcement. Unless an emissions trading scheme (ETS) is structured very strictly to avoid offsets, leakage and any and all escape valves, it is extremely difficult to guarantee "an absolute quantity". This difficulty is made all the more</p>

	transport fuel associated with a 1% price increase is 0.6 to 0.8% in the long run, although the short-run response is much smaller. ^v Greenhouse gas emissions drop accordingly.		serious where the "enforcement mechanism" is the fluctuating price of traded permits. Traded permits are meant to be a pressure valve, not the lead pricing mechanism.
Political Inclusiveness: Is the policy able to be supported across political viewpoints?	By internalizing the impact of GHGs while returning revenue to all households, Carbon Fee and Dividend is a politically inclusive. Those right of centre like revenue neutrality, and those left of centre support initiatives that reduce income inequality (lower and middle income households come out ahead with a dividend cheque because their carbon footprints are much lower than those in the higher income bracket.) ^{vi}	Carbon Taxes that increase government coffers and compromise GDP are likely to receive conservative political opposition.	Often industry preferred as a carbon pricing mechanism, leading to some centrist political support. Conservatives don't like this policy because it is costly and requires bureaucratic support.
Clarity: Does the policy provide clear signals and incentives?	A Carbon Fee and Dividend provides a specific price level which is structured to rise consistently over time, providing clarity to fossil fuel producers and investors.	Similar to Carbon Fee and Dividend, a Carbon Tax can provide a price signal to the market. A rising fee sends a strong signal to improve efficiencies and invest in clean energy alternatives. Low Carbon Taxes that remain static do not.	As price is set through ongoing market activity, the price is dynamic and changing over time. A shrinking cap will provide price support over time. A strong price ceiling and floor are required to ensure clarity.
Urgency: Can the policy be implemented rapidly?	Similar to a Carbon Tax, a Carbon Fee and Dividend can be rolled out over a year, similar to the introduction of other new taxes.	Upon deciding on a tax base and initial tax level, can be rolled out over a single year, similar to the introduction of other new taxes.	Due to administrative complexity, has traditionally required a longer term of implementation. ^{vii}
Emissions Coverage: Does the policy cover all emissions sources?	By targeting sources of energy on entry into the economy, at well, mine head, or port, Carbon Fee and Dividend can capture the majority of emissions in the economy.	Large majorities of up to 80% captured from taxing major emitting point sources. ^{viii}	Coverage is dependent on how many emissions sources are included in the cap, with significant majorities usually captured from major emitting sources and energy producers.

<p>Impact on low-income families: Does the policy address the cost of living effects on low-income households?</p>	<p>Each household receives an equal monthly dividend. According to a paper by the Centre for Policy Alternatives, which used Income Tax data from the BC Carbon Tax, two thirds of people consume average or less than average fossil fuel, and as such, most will come out even or ahead with the dividend cheque.^{ix}</p>	<p>Revenues flow to government. Low-income households expected to bear a proportionally greater income impact.^x</p>	<p>Revenues from permits can flow to government or industry. Cap and Trade can be designed to return revenues to the public, including low-income households who are expected to bear a proportionally greater income impact due to rising costs passed on from producer to consumer.</p>
<p>Simplicity: Is the policy administratively simple?</p>	<p>Relies on pre-existing revenue and collection systems to collect and distribute fees while providing coverage over most emissions from a relatively small number of affected entities.</p>	<p>Like Carbon Fee and Dividend, relies on pre-existing revenue and collection systems to collect and distribute fees while providing coverage over most emissions from a relatively small base.</p>	<p>Requires development of a new agency to monitor emissions permits trades. Administrative simplicity or complexity depends on what is permitted. If end-use emissions (i.e. at industry level) are permitted, more complexity can be expected. If fuel stocks (i.e. at point of extraction) are permitted this complexity is significantly reduced.</p>
<p>Regulatory Fairness: Does the policy treat all industries equally?</p>	<p>Treats all fossil fuel industries equally by targeting upstream sources with prices carried down throughout supply chains.</p>	<p>If applied at point of extraction or when it enters the market, then similar to Carbon Fee and Dividend. If applied at the retail level, then industries and fossil fuels not treated equally as some will be impacted and others not.</p>	<p>Can become more inclusive and fair to all industries by including all industries within the cap.</p>
<p>Accountability: Is the policy easily understood by the public?</p>	<p>Price transparency makes incentives clear to the whole economy, making evasion more difficult. Carbon dividends also provide an ongoing, desired public benefit.^{xi}</p>	<p>Price clarity and transparency makes incentives clear to the public as well as business, making evasion more difficult. Use of revenues is not determined.</p>	<p>Pricing and reductions produced indirectly through market transactions. Poorly designed Cap and Trade systems are vulnerable to manipulation.</p>

Conclusions

While any price on carbon is better than none, the above analysis indicates that a **Carbon Fee and Dividend** is a superior carbon pricing mechanism in capturing the administrative and economic efficiency of a Carbon Tax while being more politically inclusive by focusing on returning all fees to citizens. This both addresses the distributional impacts of carbon pricing and does not grow the size of government, something acceptable across political viewpoints.

As described above, a Carbon Fee and Dividend is ultimately:

- **Economically Efficient;**
- **Politically Inclusive;**
- **and Clear to the public**

We therefore believe it is a policy worthy of serious political consideration and enactment.

For a full discussion and further information on Carbon Fee and Dividend, please see citizensclimatelobby.ca or contact Cathy Orlando, Citizens' Climate Lobby Canada National Manager at cathy@citizensclimatelobby.ca.

References Used

ⁱ Nystrom, S., & Luckow, P. (2014). The Economic, Climate, Fiscal, Power, and Demographic Impact of a National Fee-and-Dividend Carbon Tax. Washington, D.C.: Regional Economic Models, Inc. Retrieved from <https://citizensclimatelobby.org/remi-report>

ⁱⁱ Shi-Ling Hsu (2011). The Case for a Carbon Tax: Getting Past Our Hang-ups to Effective Climate Policy. Island Press. For eight page Precis: http://myweb.fsu.edu/shsu/HSU_carbon_tax_precis4.pdf

ⁱⁱⁱ Citizens' Climate Lobby Laser Talk: Offsets.

^{iv} Stewart Elgie, "British Columbia's Carbon Tax Shift: An Environmental and Economic Success." Sustainable Prosperity, September 10, 2014.

^v ICPP WG3 AR5 Summary for Policy Makers, April 13, 2014

^{vi} Citizens' Climate Lobby Canada paper, "Carbon fee and dividend- a tax that heavily taxes the carbon intensive habits of the '1%', spares the middle class and protects the poor", May 14, 2012.

^{vii} Avi-Yonah, R. S., & Uhlmann, D. M. (2009). Combating Global Climate Change: Why a Carbon Tax is a Better Response to Global Warming than Cap and Trade. Stanford Environmental Law Journal, 28, 3.

viii See: Metcalf, G. E., & Weisbach, D. (2009). Design of a Carbon Tax, The. Harvard Environmental Law Review, 33, 499.

ix See for full discussion: Jaeger, W. K. (1995). The welfare cost of a global carbon tax when tax revenues are recycled. Resource and Energy Economics, 17(1), 47–67. doi:10.1016/0928-7655(94)00026-G & Metcalf, G. E. (2007). A green employment tax swap: using a carbon tax to finance payroll tax relief. Brookings Institution.

x See for full discussion: Hamilton, K., & Cameron, G. (1994). Simulating the Distributional Effects of a Canadian Carbon Tax. Canadian Public Policy / Analyse de Politiques, 20(4), 385–399. doi:10.2307/3551997 & Poterba, J. M. (1991). Tax Policy to Combat Global Warming: On Designing a Carbon Tax (Working Paper No. 3649). National Bureau of Economic Research. Retrieved from <http://www.nber.org/papers/w3649>

xi See: Andrew, B. (2008). Market failure, government failure and externalities in climate change mitigation: The case for a carbon tax. Public Administration and Development, 28(5), 393–401. doi:10.1002/pad.517