

## **Carbon Taxes: Key Issues, Key Questions**

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A “carbon tax” is a tax levied by governments on emissions of greenhouse gases, the main cause of global warming. The name comes from the fact that greenhouse gas pollution consists mainly of carbon dioxide, most of which comes from burning carbon-containing fossil fuels — including coal, natural gas, heating oil, gasoline and diesel fuel.

A carbon tax is one of two main policies that can be used to put a price on greenhouse gas pollution. The other main “carbon pricing” policy is a “cap-and-trade” system, where governments place a regulated cap on total emissions from a group of polluters, but allow them to trade emission “allowances” inside the cap.

### ***The importance of putting a price on pollution***

#### **For heavy industry**

Putting a price on pollution — whether through a carbon tax or a cap-and-trade system — is widely believed to be the best way to reduce greenhouse gases from heavy industry (responsible for about 50% of Canada’s total emissions):

- Including the cost of pollution changes calculations of industrial investments, shifting those investments towards activities with lower emissions.
- According to economic theory, when all polluters face the same emissions price, the overall cost of meeting a particular target for total pollution is minimized.
- With a carbon tax or cap-and-trade system, this can be achieved with a single policy — avoiding the complexity of separate policies designed specially for each industrial sector.

#### **For individuals**

Putting a price on pollution is likely to be a less effective and less efficient way — at least in the near term — to reduce emissions from smaller businesses or individuals. This is because they often face barriers to taking cost-effective action to cut emissions, such as a lack of information, available alternatives and access to financing. Also, non-financial considerations can be important for individuals. “Complementary policies” are therefore essential. These include energy efficiency regulations for buildings and vehicles, financial incentives for home retrofits, and investments in public transit.

There is still merit, however, in putting a price on greenhouse gas pollution from smaller businesses or from individuals, as long as there are provisions to protect people on low incomes:

- It does create a direct incentive to take action to cut emissions.
- Putting a price on pollution is a way of ensuring we pay for environmental costs — the “polluter pays” principle. Burning fossil fuels with no price on the emissions — without paying any environmental costs — is like subsidizing dirty energy. It’s difficult to justify maintaining these subsidies indefinitely.
- In the longer term, as more alternatives become available and people are better informed about them, putting a price on pollution should become an increasingly effective way to help cut emissions from smaller businesses or from individuals.

### ***Carbon tax or cap-and-trade?***

There is much discussion about whether a carbon tax or a cap-and-trade system is the best way to put a price on greenhouse gas pollution. In fact, the two options are quite similar. The environmental and economic effects — how much will emissions be reduced and who will pay? — depend on the emissions price, the sectors to which it applies, and what any revenues are used for (see “fundamental questions” below). The effects depend much less on the choice between carbon tax or cap-and-trade system.

### **Pros and cons**

Cap-and-trade has one key environmental advantage: it provides more certainty about the amount of emission reductions that will be generated, and little certainty about the price of emissions (which is set by the emissions trading market). A carbon tax provides certainty about the price, but little certainty about the amount of emission reductions. Governments need to be willing to make regular adjustments to the level of a carbon tax to meet national emission targets — something that may be politically difficult.

A carbon tax also has one key advantage: it is easier and quicker for governments to implement. A carbon tax can be very simple, can rely on existing administrative structures for taxing fuels and can therefore be implemented in just a few months. In theory, the same applies to cap-and-trade systems, but in practice they tend to be much more complex, to be susceptible to lobbying and to require much more time to develop the necessary regulations. Cap-and-trade also requires the establishment of an emissions trading market. The federal government currently has far greater capacity for, and experience with, taxation than it does with large-scale regulation of emissions.

### **More similar than you may think**

It is sometimes assumed that a carbon tax is for consumers (gasoline, home heating fuel) and cap-and-trade is for industry. That’s not necessarily the case. British Columbia recently announced a carbon tax on nearly all emissions from burning fossil fuels. As of July 2008, the BC tax will apply to 70% of the province’s total greenhouse gas pollution, including emissions from industrial facilities, buildings, homes, cars and trucks. (The BC government has indicated that it may later partially replace the tax by a cap-and-trade system being developed with other provinces and U.S. states in the Western Climate Initiative.)

Administratively it is simplest to collect a carbon tax from fuel wholesalers. They pay the tax on the emissions that will come from burning the fuel they sell, and then pass the tax on to

consumers through fuel prices. Cap-and-trade could be applied to consumers using essentially the same approach: instead of paying tax, fuel wholesalers would have to buy emission “allowances” to “cover” the emissions from burning the fuel they sell. The cost of the credits would again be passed on in fuel prices.

It is sometimes said that “polluters can just buy their way” out of a carbon tax. That’s true, but polluters can also “buy their way out” under a cap-and-trade system — by paying for extra emission allowances. What matters more is that in both cases, polluters have a direct incentive to take all available actions to cut emissions wherever these actions cost less than the price on emissions.

Just as a carbon tax generates revenues for the government, so too does a cap-and-trade system if the emission allowances are auctioned off by the government (instead of being given away for free).

## **Our view**

Based on available economic analysis, the David Suzuki Foundation and the Pembina Institute believe that for Canada to do its part in reducing greenhouse gas pollution, we need a price on emissions of at least \$30/tonne immediately, at least \$50/tonne by 2015 and at least \$75/tonne by 2020. We believe this price should be applied broadly in the Canadian economy, but that it can be done either through a carbon tax, a cap-and-trade system, or a combination of the two. Where cap-and-trade is used, we support the auctioning of all allowances, because when governments give allowances away for free, they are not applying the polluter pays principle.

## **Key questions**

### **Fundamental questions**

To evaluate any proposed carbon tax, one first needs answers to three fundamental questions:

1. **What emissions will the tax apply to?** For instance, will it apply just to individuals, or to industrial emissions as well? The amount of emission reductions generated by the tax will depend on which sectors the tax applies to. This choice will depend in part on what other policies will be used to reduce emissions.
2. **What will be the tax level?** This is usually expressed in dollars per tonne of emissions. For example, a tax of \$50/tonne, applied to the emissions from burning gasoline, works out to about 12 cents per litre of gasoline. The same tax applied to the emissions generated when producing a barrel of oil from Alberta’s oil sands works out to about \$3–5 per barrel. The higher the tax level is, the greater the emission reductions will be.
3. **What will the money will be used for?** Money raised by a carbon tax could be used for any combination of spending programs or reductions in other taxes, such as income tax. Emissions will be reduced as a result of the tax itself, but they could be reduced even further if tax revenues are dedicated to effective environmental programs. A carbon tax on its own could cause unmanageable cost increases for people on low incomes, or for vulnerable industries, but a portion of the tax revenues could be used to eliminate those impacts. With a “revenue neutral” or “tax neutral” carbon tax, 100% of the tax revenues would be used to reduce other taxes.

## Detailed questions

The detailed environmental and economic effects of a proposed carbon tax will depend on the answers to the three basic questions above. If those answers are complicated, then the detailed effects may not be obvious, and understanding them may require further analysis and modelling. However, it should be the responsibility of any politician proposing a carbon tax to answer the following additional questions:

4. **By how much will the tax reduce emissions, and by when?** Since the purpose of a carbon tax is to reduce emissions, any carbon tax proposal must include a statement of expected emission reductions over time. Economic models can be used to provide estimates of this.
5. **What process will you follow to adjust the tax level to ensure sufficient emission reductions?** If a carbon tax proposal does not specify the tax level beyond the first few years, it should lay out clear criteria for making decisions about tax levels in the longer term. Even if tax levels are specified far into the future, there should be a clear process for adjusting the levels as needed to meet emission reduction objectives.
6. **What is your target for total national (or provincial) emissions?** A carbon tax or cap-and-trade system is just one essential element of a greenhouse gas reduction plan. It is important to compare the effects of a proposed carbon tax to national (or provincial) emissions targets to assess whether the tax is ambitious enough and to understand the extent to which it needs to be complemented by other emission-reduction policies.
7. **What complementary policies (regulations, financial incentives, investments) will you also use to cut greenhouse gas pollution?** To assess whether a carbon tax will make an adequate contribution to meeting national (or provincial) emissions targets, it is necessary to specify the complementary policies that will be implemented in tandem with the tax. The level of ambition of complementary policies — i.e., targets for emission reductions, other measures of performance and spending amounts — needs to be made clear.
8. **How much money will you spend on investments and financial incentives to reduce emissions (regardless of whether the money comes from the carbon tax or not)?** A comprehensive greenhouse gas reduction plan needs to contain public investments and financial incentives in addition to regulations and, potentially, a carbon tax. If the necessary money does not come directly from the carbon tax itself, then it must be explained where else it will come from.
9. **How will people on low incomes be protected?** Like a sales tax, a carbon tax could be “regressive,” meaning that people with the lowest incomes could pay the largest share of their incomes in tax. Measures to prevent this must be clearly set out, and include immediate (not delayed) financial assistance as well as programs to help reduce energy consumption (e.g., through home retrofits).
10. **If you include measures to protect certain industry sectors from impacts on competitiveness, have you shown that those measures are actually needed?** Some people propose measures to shield or exempt industries from a carbon tax. These include “border tax adjustments” and returning tax revenues to industries in proportion to their output. However, industries’ vulnerability to a carbon tax depends on their profitability and mobility, which vary greatly. Protection should be offered only for sectors where

there is a clear, independent assessment that a proposed carbon tax will cause significant relocation.

11. **What costs and benefits do you expect for people in a range of circumstances?** Any carbon tax proposal should be accompanied by an analysis, and illustrative examples, of how it is expected to affect people depending on the province or region where they live, the heating fuel they use, urban versus rural settings and other relevant factors.
12. **What will be the net financial effects on each province and territory?** Because the level of greenhouse gas emissions per person varies so widely across Canada, a carbon tax has the potential to create substantial net financial flows between provinces. But the flows could be quite small or even eliminated depending on how the tax revenues are used.

A very similar list of questions to those above should be asked of any proposed cap-and-trade system.

### ***For more information***

- Clare Demerse and Pierre Sadik, “Carbon Pricing: Efficiently Stimulating Greenhouse Gas Emission Reductions,” in *Big Steps Forward, Recommendations for Budget 2008* (Ottawa, ON: Green Budget Coalition, 2007), 7–15. Also available online at <http://climate.pembina.org/pub/1549>.
- Nic Rivers and Dave Sawyer, *Pricing Carbon: Saving Green — A Carbon Price to Lower Emissions, Taxes and Barriers to Green Technology* (Vancouver, BC: David Suzuki Foundation, 2008). Also available online at [http://www.davidsuzuki.org/Publications/Pricing\\_Carbon\\_Saving\\_Green.asp](http://www.davidsuzuki.org/Publications/Pricing_Carbon_Saving_Green.asp).
- Matthew Bramley and Clare Demerse, *The Pembina Institute’s Perspective on Carbon Pricing in Canada* (Drayton Valley, AB: The Pembina Institute, 2008). Also available online at <http://climate.pembina.org/pub/1584>.
- The Pembina Institute, *Canadians’ Views on a Carbon Tax to Reduce Greenhouse Gas Emissions* (Drayton Valley, AB: The Pembina Institute, 2008). Also available online at <http://climate.pembina.org/pub/1640>.
- Matt Horne, *Cap and Trade: Reducing Pollution, Inspiring Innovation* (Drayton Valley, AB: The Pembina Institute, 2008). Also available online at <http://climate.pembina.org/pub/1616>.