

Dissonance in Federal Carbon Pricing Regime(s)

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Legislation Commented On: Legislative Proposals Relating to the *Greenhouse Gas Pollution Pricing Act*

Last week, the Trudeau government released draft legislation for a national price on carbon pollution, the [Greenhouse Gas Pollution Pricing Act](#). While this significant step should be lauded as follow-through on important election and international commitments, it is another step toward embedding a disconcerting dissonance that still exists within the federal approach to assigning a monetary value to carbon emissions. Specifically, there remains a glaring and unexplained discrepancy between the soon-to-be-legislated carbon price and the dollar value associated with the social cost of carbon (SCC) used in federal regulatory analyses. In this post, I briefly recount the path to the release of last week's legislative proposal, then explain the social cost of carbon concept and how it is used, and then conclude with a short account of the apparent dissonance between the carbon pricing in the draft legislation and the government's SCC estimates.

Path to Draft Federal Carbon Pricing Legislation

Soon after the fall 2015 federal election, the Trudeau government negotiated the [Pan-Canadian Framework on Clean Growth and Climate Change](#) with provincial and territorial governments (though note that Saskatchewan and Manitoba [did not sign on](#)). A central part of that framework was a commitment to pricing carbon pollution across the country by 2018. To achieve this, the federal government committed to implementing a national carbon pricing "backstop" that would apply in any province or territory that does not have a carbon pricing system in place by 2018 that is consistent with the federal scheme. Further details came in October 2016 when the federal government released the [Pan-Canadian Approach to Pricing Carbon Pollution](#), referred to as "the benchmark", which outlines the criteria that provinces and territories must meet in their respective carbon pricing systems. A key policy design feature is that provinces and territories have flexibility to implement carbon pollution regimes of their choice – typically either a carbon tax, cap-and-trade system, or some kind of hybrid (as many readers know, Alberta currently has the [latter](#)).

In May of 2017, the federal government released a [Technical Paper on the Federal Carbon Pricing Backstop](#) that fleshed out the details of the backstop. In particular, the Technical Paper laid out details of the two key components: a carbon levy (i.e. tax) applied to fossil fuels, and an output-based pricing system for industrial facilities that emit above a certain threshold. The carbon levy is to apply to liquid fuels (e.g. gasoline, diesel, aviation fuels), gaseous fuels (e.g. natural gas) and solid fuels (e.g. coal and coke) and is set for an initial period of 2018-2022. The levy amount is to be \$10 per tonne annually, increasing \$10 per year to \$50 per tonne in 2022 (see tables at pp 6-7 of the Technical Paper). The levy is to apply to fuels used in the backstop jurisdiction and is to be payable by fuel producers, distributors and importers monthly. It is generally expected that these parties will pass the costs on to their consumers (e.g. consumers at the pump).

The Technical Paper explained that the second key backstop component, the output-based pricing system for industrial facilities, would apply where annual emissions are 50,000 tonnes or more (though facilities below that may opt-in). This system is

designed such that covered facilities only pay if or when their emissions are above a specified level per unit of production, and that level is to be set based on industry performance standards that will increase in stringency over time. The Technical Paper also explained that facilities will have several compliance options, including use of carbon offset credits or acquisition of surplus credits issued to facilities that are below regulated limits. The actual carbon pricing for all this is the same as the carbon levy benchmark, i.e. \$10/tonne in 2018, rising to \$50/tonne in 2022 (see Schedule 4 of the legislative proposal).

This brings us to the here and now. Last week the federal government shifted from policy design to legislative architecture when it released the draft *Greenhouse Gas Pollution Pricing Act*, along with [explanatory notes](#). Overall, there are minimal surprises in the legislative proposal; it basically codifies what was set out in the Technical Paper and benchmark documents and includes what one would expect in terms of administration, enforcement, payments and regulation-making powers. Most notably for this post, the draft legislation includes the same carbon price that the federal government proposed in 2016 – \$10/tonne in 2018, rising to \$50/tonne in 2022, though it is broken out into detailed year-over-year charge rates in Schedule 2.

Interested readers will note that the public period to [comment on the legislative proposal](#) is open until February 12, 2018. Provisions that may be of particular interest include: regulation making powers in s 165(1), authority to trigger application of the carbon levy system in specific provinces or territories (i.e. Part 1 of Schedule 1 and Schedule 2) in s 165(2) to (4), authority to trigger application of the output-based pricing system in specific provinces or territories in s 180 (Part 2 of Schedule 1), general regulation-making power in s 183, regulation-making power in relation to the offset credit system in s 185, the provinces and areas lists in Schedule 1, the charge rates set out in Schedule 2, and the excess emissions charges set out in Schedule 4.

Social Cost of Carbon

In the background throughout the Trudeau government's development of the national carbon pricing regime has been a lower profile and lesser known carbon pollution dollar value: the Social Cost of Carbon ("SCC"). Put succinctly, the SCC is an estimated dollar value representing net effects associated with an incremental increase in carbon emissions in a given year. It is typically expressed in dollars per tonne of carbon dioxide. SCC dollar values are sometimes characterized as representing the marginal damage of an additional tonne of carbon dioxide emitted. Put in economists' terms that treat climate change as a market failure resulting in the externality of carbon pollution costs not being priced into transactions, SCC is a quantification of such externalities for the purpose of internalizing these costs into the economic transactions. How SCC values are generated is a relatively complex affair using sophisticated "Integrated Assessment Models", which I describe in detail in a recent journal article [comparing SCC use in Canada and the U.S.](#)

The Government of Canada requires all departments and agencies to conduct a cost-benefit analysis (CBA) of proposed regulatory action. This CBA is a significant part of the Regulatory Impact Analysis Statement ("RIAS") that a sponsoring government department or agency must generate for any regulatory proposal. In cases where a regulatory proposal deals with carbon emissions (e.g. regulation of emissions from vehicles or coal-fired power plants), SCC is used to express the monetary value of

changes in emission amounts. That value is then factored into the broader CBA, which in turn informs final decisions about regulatory rules.

Environment and Climate Change Canada (ECCC) is typically the lead department on such regulations. ECCC began integrating the SCC into decision-making in 2010. As I discuss in my paper cited above, in developing its own SCC values, Canada relied heavily on work completed by the U.S. (especially the modelling). Similar to the U.S., Canada struck a working group to conduct this analysis, and that working group has been constituted from time to time since. This group has issued several technical updates that are used by the federal government to set SCC values, which are then used in the CBAs in the RIAs. The most recent technical update, from spring 2016, can be found [here](#). The 2016 technical update set the SCC “central value” (which is the one accorded most weight in RIA CBA) at \$40.7 per tonne. In the same update, the “95th percentile” SCC value, which is used to take into account climate change impacts of the more extreme variety (so called, “low-probability, high-cost events”), was set at \$167/tonne. Both of these values represent significant increases from the working group’s previous estimates. Change to SCC estimates are summarized in the table below.

Year	Previous central	Updated central	Previous 95th percentile	Updated 95th percentile
2010	27.6	34.1	108.6	131.5
2013	29.4	37.4	116.5	149.3
2015	30.7	39.6	121.8	161.1
2016	31.3	40.7	124.5	167.0

Federal Carbon Price Backstop vs SCC Values – Why the Dissonance?

Looking at the current SCC values against the federal benchmark carbon price reveals a concerning dissonance. Where the federal carbon price backstop is set at \$10/tonne, the SCC central value is \$40.7/tonne and the 95th percentile value is \$167/tonne. The gap here is significant. It is significant enough that one would expect the federal government to offer some rationale or explanation. Unfortunately, none is to be found.

There is no discussion nor mention of SCC in the Pan-Canadian Framework, the benchmark document, or the Technical Paper. Similarly, while an [economic analysis](#) of the Pan-Canadian Framework released by the government describes how the government considered economic, environmental and social costs in developing the framework, there is no mention or treatment of the SCC concept. Likewise, the 2016 SCC Technical Update makes only one comment in passing: “it would not necessarily be appropriate to use the estimates in another context or infer that the SCC as it is developed here should be considered as a potential carbon price for Canada”. That’s it. Unfortunately, such scant detail regarding SCC is in keeping with my [findings](#) that Canada has been thin on justifying its selective approach to using U.S. SCC analyses to generate Canadian figures, despite the apparently important role and significant weight accorded to SCC in regulatory decision making.

There are two levels of problems here, the first in terms of process and transparency, and the second in terms of substantive dissonance. In terms of process, the federal

government clearly needs to do a better job of openly acknowledging the discrepancy between SCC values and the federal carbon price (including anticipated future changes to both). The absence of such undermines the credibility of both schemes. Perhaps more importantly, such an acknowledgement or explanation would help affected actors in the marketplace understand which value or mix of values they should rely on in conducting their own fiscal projections and modelling. Decarbonization is a major economic shift for Canada and mixed signals and policy incoherence certainly won't be helpful.

The second level of problem is the lack of clarity about whether there is a tenable basis for these values to be different. Framed in reference to the above quote from the SCC Technical Paper, clarity is needed with respect to whether SCC estimates should or should not be considered as the basis for a potential carbon price for Canada. From a short-term perspective, one might argue with some persuasiveness that the low national carbon price is a way for the economy to ease into this nation-wide pricing regime and that the annual increases to 2022 and beyond are on track to converge with SCC estimates (presumably the central value, not the 95th percentile).

In the longer term, however, a more robust explanation is required, one that clearly identifies what (hopefully mutually reinforcing) role each of these policy levers plays in Canada's emission reduction plans. Canada has acknowledged that enhanced policies and measures are necessary in order to have any hope of meeting its [international climate commitments](#) under the Paris Agreement (in this regard, there is the other long-standing dissonance between Canada's international commitments and what we are actually on track to achieve). And, of course, those commitments and associated domestic measures are just Canada's means to achieve the ends of contributing to reducing global greenhouse gas emissions to a level that avoids the dangerous climate change, the shared goal set out in the United Nations Framework Convention on Climate Change and reiterated in the Paris Agreement. In an ideal world, there should be consistency across the board: Canada's commitments ought to match what's needed to avoid dangerous climate change, and climate change impacts can be quantified based on expected damages which are in turn expressed as a monetary figure in the form of harmonized values between the social cost of carbon and economy-wide carbon pricing. If this is the grand plan, then Canada should state this more clearly and facilitate a smooth transition from today's dissonance to tomorrow's harmony. If this is not the plan, then Canada needs to explain why not. Answering these questions about why the dissonance exists must be left for a deeper analysis on another day, ideally through a rigorous multi-disciplinary approach, but it is an important question that the government should address head-on.

In 1957, Leon Festinger released, "A Theory of Cognitive Dissonance", a seminal work that has influenced the field of psychology ever since, particularly studies concerned with the simultaneous holding of two contradicting views. Contrary to the popular view, often offered in jest, that cognitive dissonance might be a mark of intelligence, Festinger and many subsequent psychologists concluded that cognitive dissonance is actually a highly uncomfortable state. Truth be told, a person who experiences such internal inconsistency quickly becomes uncomfortable and is motivated to reduce the dissonance. Reconciliation, if you will. Experienced law-makers will recognize this phenomenon, as it bears similarities to incoherence or inconsistency within and between laws and policies that then become targets for adjustments to minimize or

eliminate such dissonance. Of course, the optimal time to do this is before a law is passed. It will be interesting to see whether the dissonance between the benchmark carbon price and the social cost of carbon values gets addressed by the government, or at least explained, between now and final product. The wait could be uncomfortable.

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