



CANADIAN COUNCIL ON
RENEWABLE ELECTRICITY
CONSEIL CANADIEN SUR
L'ÉLECTRICITÉ RENOUVELABLE

April 30th, 2018

Paola Mellow,
Executive Director, Electricity and Combustion Division, Environment and Climate Change Canada
Transmitted electronically to: ec.electricite-electricity.ec@canada.ca

RE: Comments on Proposed Federal Carbon Pricing Backstop

Dear Ms. Mellow:

Thank you for the opportunity to comment on the proposed federal carbon pricing backstop. The Canadian Council on Renewable Electricity (CanCORE) represents the aligned interests of the four major national renewable electricity trade associations in Canada: the Canadian Hydropower Association (CHA), the Canadian Wind Energy Association (CanWEA), the Canadian Solar Industries Association (CanSIA) and Marine Renewables Canada (MRC). Our over-arching goal is to ensure that Canada moves toward achieving our national non-emitting electricity target of 90% by 2030, and close to a 100% non-emitting electricity grid by 2050, to ensure that Canada meets our national climate action and clean growth objectives, and international obligations under the Paris Agreement.

It is our strong view that carbon pricing is a critical and foundational component of the Pan-Canadian Framework on Clean Growth & Climate Change (PCF). As we communicated in our recent submission *Comments on Proposed Federal GHG Emission Regulations for the Electricity Sector* (April 18, 2018), however, “we have noted a consistent pattern in proposals to date (e.g., the Natural Gas Greenhouse Gas Emissions Standard, the federal carbon pricing backstop) that fails to send any meaningful market or price signals to investors that natural gas is a transition fuel that will play a decreasing role in our electricity supply-mix over time”. A Pan-Canadian clear, fair and effective price signal with long-term policy certainty that shifts investment over-time away from emitting toward non-emitting electricity generation sources is the single largest critical success factor for Canada to meet our stated objectives and obligations.

It is currently proposed in Environment & Climate Change Canada’s Multi-Stakeholder & Technical Working Group process that the electricity sector would be covered by an Output-Based Performance Standard (OBPS) of 420 t / GWh. In this letter, CanCORE presents commentary and recommendations related to the shortcomings of the proposed coverage and stringency of this approach that we believe make the electricity sector OBPS inconsistent with the stated objectives and obligations.

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Canada's Ecofiscal Commission has stated, "All else being equal, the broadest coverage of carbon pricing will deliver the greatest emissions reduction at the lowest cost"¹. The proposal to cover the electricity sector with an OBPS of 420 t/GWh results in a coverage of electricity sector emissions that is extremely narrow, ranging from less than 0% to 61% in comparison to 100% under a Carbon Levy, as illustrated in Table 1 below.

Table 1: Comparison of Coverage of Electricity Sector Emissions under Carbon Levy and Federal Output-Based Performance System (OBPS) as proposed

	Coverage under OBPS = 0 t/MWh (i.e. equivalent to a Carbon Levy)	Coverage under OBPS=420 t/GWh (i.e. Federal proposal)
Coal (1007 t/GWh)	100%	61%
Natural Gas Single Cycle (670 t/GWh)	100%	37%
Natural Gas Combined Cycle (420 t/GWh)	100%	0%

As stated by the *Technical Paper on the Federal Carbon Pricing Backstop* (May, 2017), "the aim of an output-based pricing system is to minimize competitiveness and carbon leakage risks for activities for which those risks are high, while retaining the incentives to reduce emissions created by the carbon pricing signal." The vast majority of electricity generation in Canada is not subject to competitiveness or leakage considerations. Industrial use of electricity represents only a portion of electricity use in Canada, many regions are dominated by non-emitting electricity that is not sensitive to a carbon price and only a subset of remaining Canadian industry in emission intensive regions are trade exposed (EITE). For this reason it is inefficient economically and environmentally to shelter most electricity users from a full carbon price. However, we recognize that responses to price signals will be different from: facilities with no access to power lines or pipelines; EITE sectors; existing electricity generation facilities that are less elastic to price signals due to investments already made that run the risk of becoming stranded assets if further amortization is not achieved; and future electricity generation facilities that are extremely elastic to price signals.

¹ Canada's Ecofiscal Commission (June, 2017) "Supporting Carbon Pricing: How to identify policies that genuinely complement an economy-wide carbon price."



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CanCORE does not support the application of a single OBPS across the entire electricity sector for these reasons. We recommend that ECCC consider developing a distinct OBPS for each of: i) new electricity generation facilities; ii) EITE and existing electricity generation facilities; and iii) remote facilities with no access to power lines or pipelines. The stringency of these different OBPS are discussed in the next section.

Taking steps to ensure that clear price signals continue to decarbonize our electricity sector while balancing competitiveness and affordability is key for the design of the Federal Carbon Pricing Backstop. While CanCORE questions the use of an OBPS in the electricity sector at all, it offers the following three recommendations as a compromise to reduce the impact of carbon pricing on EITE and other electricity users:

- **For new emitting electricity generation facilities, the OBPS should be set at 0 t/GWh.** In other words, new facilities should be exposed to the full Carbon Price as is currently the case in Ontario, Quebec and British Columbia. Investors seeking to build new electricity generation in Canada must receive a clear signal that encourages consideration of non-emitting generation alternatives and makes it clear that the economics of investment in emitting electricity generation will become less and less attractive with the passage of time.
- **For existing emitting electricity generation facilities, the OBPS should initially be set at 370 t/GWh declining by 1 per cent per year.** This would be consistent with the current approach in Alberta and would address the unique competitiveness and leakage risks in Emissions Intensive and Trade Exposed (EITE) sectors. In this approach, existing facilities would benefit from having much of their emissions sheltered from the full carbon price in the initial years.
- **For facilities that do not have access to power-lines or pipe-lines (i.e. remote mines), a discrete OBPS could be negotiated at a level greater than 370 t/GWh (with a commitment to strengthen on a regular basis thereafter).** This would address the unique challenges to decarbonization in these special instances.

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Table 2: Comparison of Stringency of Electricity Sector Emissions under Carbon Levy, CanCORE Proposal and Federal Output-Based Performance System (OBPS) as proposed (\$/t)

	<i>Carbon Price at \$50/t under</i>	<i>Carbon Price at \$50/t under</i>	<i>Carbon Price at \$50/t under CanCORE's proposal</i>
	<i>OBPS = 0 t/MWh</i>	<i>OBPS=420 t/GWh</i>	
	<i>(i.e. Carbon Levy)</i>	<i>(i.e. Federal proposal)</i>	
	<i>\$/t</i>	<i>\$/t</i>	<i>\$/t</i>
Existing Facilities			
Coal (1007 t/GWh)	\$50	\$33	\$35
Natural Gas Single Cycle (670 t/GWh)	\$50	\$13	\$15
Natural Gas Combined Cycle (420 t/GWh)	\$50	\$0	\$3
New Facilities			
Coal (1007 t/GWh)	N/A	N/A	N/A
Natural Gas Single Cycle (670 t/GWh)	\$50	\$13	\$50
Natural Gas Combined Cycle (420 t/GWh)	\$50	\$0	\$50

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Table 3: : Comparison of Stringency of Electricity Sector Emissions under Carbon Levy, CanCORE Proposal and Federal Output-Based Performance System (OBPS) as proposed (\$/MWh)

	<i>Carbon Price at \$50/t under</i>	<i>Carbon Price at \$50/t under</i>	<i>Carbon Price at \$50/t under CanCORE's proposal</i>
	<i>OBPS = 0 t/MWh</i>	<i>OBPS=420 t/GWh</i>	
	<i>(i.e. Carbon Levy)</i>	<i>(i.e. Federal proposal)</i>	
	<i>\$/MWh</i>	<i>\$/MWh</i>	<i>\$/MWh</i>
Existing Facilities			
Coal (1007 t/GWh)	50	33	35
Natural Gas Single Cycle (670 t/GWh)	34	8	10
Natural Gas Combined Cycle (420 t/GWh)	21	0	1
New Facilities			
Coal (1007 t/GWh)	N/A	N/A	N/A
Natural Gas Single Cycle (670 t/GWh)	34	9	34
Natural Gas Combined Cycle (420 t/GWh)	21	0	21

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The rationale for a federal carbon backstop is to ensure that a national carbon price signal is put in place and is intended to be applied in jurisdictions that have failed to implement carbon pricing and / or failed to demonstrate a credible plan to contribute to the greenhouse gas emission (GHG) reduction targets and actions established in the PCF. As a result, CanCORE believes that the OBPS must be set at a level that encourages provinces to take action on their own and not to prefer a federal “lowest common denominator”. The federal backstop price should strengthen and protect the most robust carbon price signals of the majority of provinces.

While the proposed lowest common denominator OBPS of 420 t / GWh provides a financial signal to move away from coal-fired generation (which is already being phased out by 2030 through regulation), it provides no meaningful economic incentives to move away from other emitting electricity generation fossil fuels and so will contribute nothing in discouraging a “dash to gas” as Canada phases out of coal-fired electricity generation. The fact that a “dash to gas” is likely is clear from ECCC’s own RIAS on its proposed greenhouse gas emission standards for coal-fired and natural-gas fired generation. This will pose a major challenge to the achievement of Canada’s greenhouse gas emission reduction targets because it represents an ‘over-investment’ in long-lived natural gas generation (and a risk of them turning into stranded assets if Canada has any serious intent to meet its climate targets) and ‘under-investment’ in new, non-emitting alternatives. While greenhouse gas emitting natural gas-fired generation has a role to play in enabling the transition to a non-emitting electricity grid, it is not part of the ultimate solution required and we should therefore be seeking to minimize its use to the greatest extent possible.

A standard of 420 t / GWh provides no carbon pricing signal at all to virtually all natural gas-fired generation. Indeed, given the fact that the best available technology for natural gas-fired electricity generation today has a greenhouse gas intensity of 370 t / GWh, the proposed OBPS actually provides a financial incentive to build new natural gas generation by allowing it to create greenhouse gas emission reduction credits that could be sold within the system. The federal government cannot proceed with a plan that completely exempts natural-gas fired electricity generation from a carbon price. Canada will need to have a much more robust system in place if it is to have any chance of meeting its climate change commitments.

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CanCORE is pleased to provide the results of some analytical work in support of these proposals that we commissioned from EnviroEconomics and Navius Research². The analysis considers the impacts of three different approaches to an OBPS on greenhouse gas emission reductions, renewable energy deployment, and electricity prices. These three approaches are: an OBPS of 0 t / GWh (full pricing), an OBPS of 133 t / GWh (current grid intensity) and an OBPS of 420 t / GWh (federal proposal).

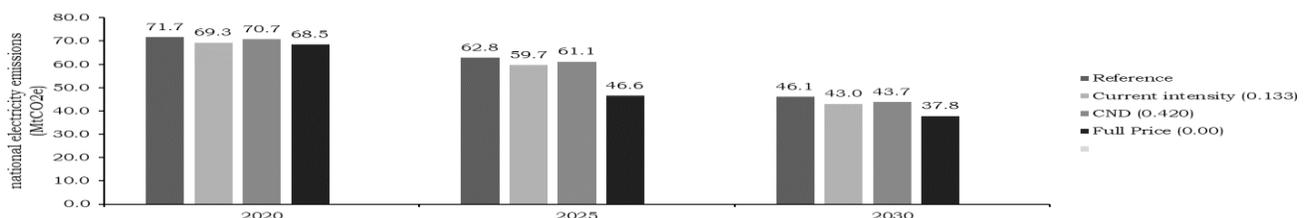
All of these approaches were assessed against a scenario where carbon prices increase to \$50 / t as currently planned under the federal carbon backstop, and then continues to increase in nominal terms by \$5 / year until 2030. Table 4 illustrates the real carbon price (\$2017) associated with each of these scenarios. It is clear that the federal carbon backstop proposal dramatically weakens any carbon pricing signal received by the electricity sector. **As noted earlier, however, there is no reason to diminish the carbon price signal for the vast majority of electricity users.**

Table 4: Federal Carbon Price as Announced, Rising at \$5 (nominal) to 2030
(\$2017 Real)

	2020	2025	2030
Fully Priced (Federal CPrice)	\$28	\$55	\$69
Current Intensity (0.133)	\$17	\$34	\$43
Federal CDN (0.420)	\$9	\$18	\$23

It is clear the level of the OBPS can have a major impact on the greenhouse gas emission reductions resulting from its application. The analysis shows that the more stringent the OBPS, the lower greenhouse gas emissions will be from the electricity sector. This is illustrated in Table 5 which shows electricity sector greenhouse gas emissions over time under various OBPS scenarios.

Table 5: Electricity Sector GHG Emissions by Scenario in Each Period



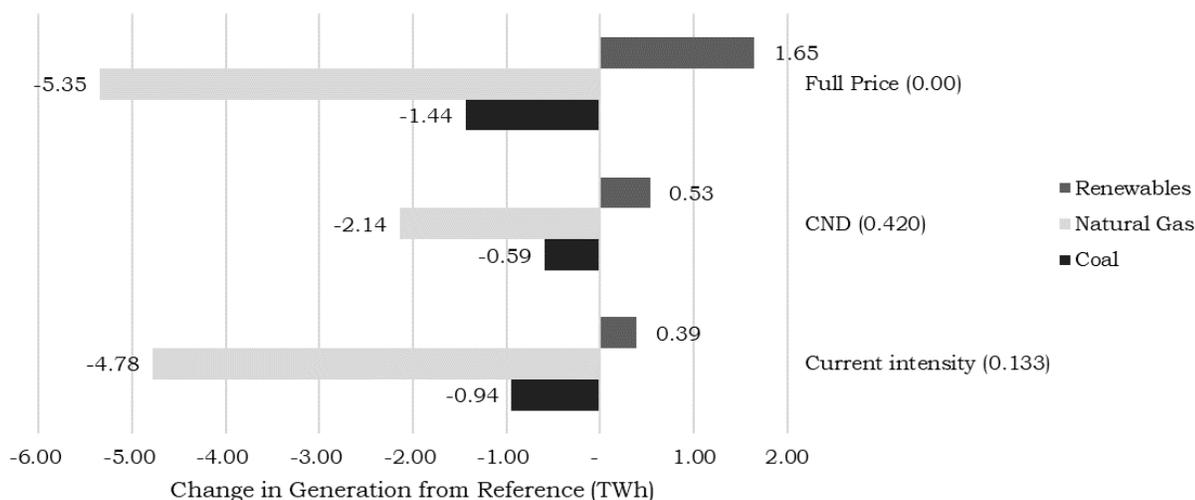
The analysis also clearly shows that the level of the OBPS can have a significant impact on the fuel mix.

² Dave Sawyer, EnviroEconomics Inc and Noel Melton, Navius Research (April 2018) “The Decarbonized Electrification Pathway: Output-Based Pricing in Canada’s Electricity Sector.”



A more stringent OBPS increases production of non-emitting generation and decreases production of GHG-emitting generation. In particular, production of natural gas-fired generation decreases with a more stringent OBPS. This outcome is consistent with efforts to minimize our use of natural gas to the greatest extent possible to avoid the risk of stranded assets and move in a manner more consistent with our climate change objectives. This is illustrated below in Table 6.

Table 6: Change in Generation Mix from Reference Case in 2030 (TWh)



The analysis also shows that the impact of carbon pricing on a national basis for electricity prices faced by a household only modestly increases as the OBPS becomes more stringent. It also demonstrates that these impacts can be mitigated through the recycling of carbon price revenue to electricity consumers – particularly relevant with respect to low income households.

National electricity price impacts have been calculated as a weighted average of the provincial price impacts. Table 7 presents the impact on the electricity price relative to the Reference Case for the various scenarios, highlighting the impact in 2030 of rebating carbon proceeds paid by household back to households.

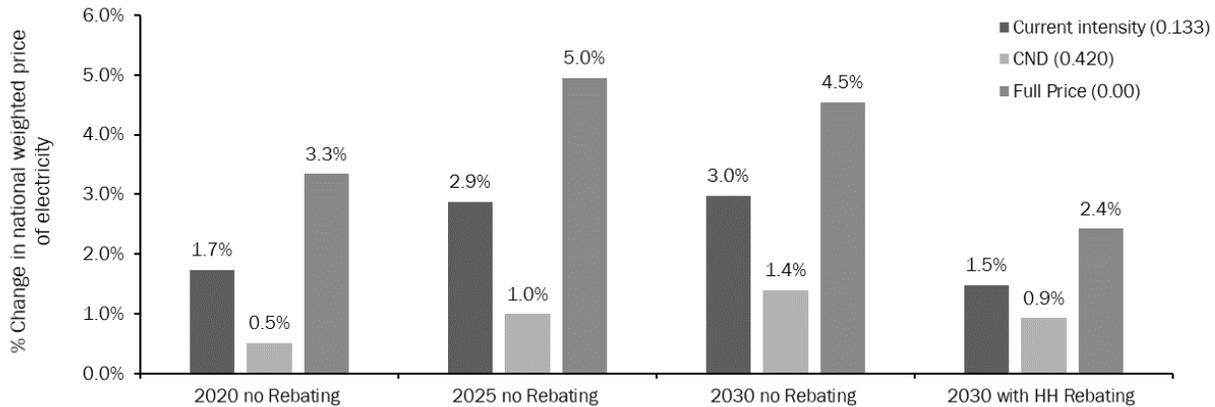
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Table 7: Change in Electricity Price from Reference (percent increase)
With and without Household Rebating of Carbon Proceeds



All of the analysis provided demonstrates that the federal government can maximize greenhouse gas emission reductions and renewable energy deployment when the electricity sector is fully exposed to carbon pricing. This scenario also maximizes the potential impact on electricity prices, but these impacts can be mitigated through revenue recycling policies.

CanCORE does, however, recognize the unique circumstances faced by existing generators, generators in EITE sectors and generators in remote locations. For that reason, we have proposed a three-tiered OBPS framework where the results in terms of greenhouse gas emission reductions, renewable and natural gas generation, and electricity prices will fall somewhere between the federal government's current proposal and the full pricing of carbon in the electricity sector.

In our view, this path is the correct one. The federal government's current proposal for the carbon backstop is unacceptable. It fails to send any meaningful carbon price signal to natural gas-fired generation and will do nothing to prevent a "dash to gas". Instead, the federal government must adopt a more nuanced approach to the use of OBPS in the electricity sector. New natural gas facilities must be exposed to the full carbon price. EITE and existing natural gas facilities should only be exempt from a carbon price to the extent they perform at a level consistent with the best available technology today and should face increased exposure over time. Special OBPS negotiations are required for facilities that use natural gas generation in remote locations where non-emitting alternatives may be more limited. Even here, however, a commitment must be made to increase the exposure to the carbon price over time.

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We thank you for your consideration.

Sincerely,

Eduard Wojczynski, President, Canadian Hydropower Association

Robert Hornung, President, Canadian Wind Energy Association (CanWEA)

John Gorman, President & CEO, Canadian Solar Industries Association (CanSIA)

Elisa Obermann, Executive Director, Marine Renewables Canada (MRC)

cc. Clare Demerse
Climate Policy Advisor
Minister of ECCC office

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