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Environment and Climate Change Canada
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Re: Pembina Institute and David Sukuzi Foundation comment on the regulatory framework for the output-based pricing sytsem

To whom it may concern:

The Pembina Institute and the David Suzuki Foundation are thankful for the invitation to share our views on Environment and Climate Change Canada's recently released *regulatory framework for the output-based pricing system* (herein the ''Framework.'')

General comments on the Framework

The Pembina Institute and the David Suzuki Foundation (herein ''we'') applaud the Canadian government's determination to move forward on carbon pricing and its flexible, yet consistent approach to doing so. We also support the hybrid design of the backstop instrument which applies a carbon levy and an output-based pricing system (OBPS) to ensure emissions-intensive and trade-exposed (EITE) industries reduce emissions while limiting the risks of carbon leakage.

Our comments on the Framework are summarized as follows:

- To enable jurisdictions to decide on a carbon pricing system that best fits their particular circumstances, they should have access to the final design of the OBPS before making a decision on whether to apply the federal backstop.
- It is paramount to set a reasonably ambitious backstop to ensure the sustained delivery of ambitious mitigation outcomes from carbon pricing across the country. This entails:
    - Establishing sector output-based standards (OBS) based on national production, without exception

    - Developing a methodology for assessing the level of competitiveness pressures — one that isolates incremental carbon pricing between Canada and foreign jurisdictions from other socio-economic factors — and clear triggers for inclusion in the OBPS
    - Defining triggers for adjusting the OBSs
    - Increasing the stringency of the OBSs annually at a rate consistent with that necessary to reach Canada's climate targets
    - Excluding electricity generation, which is neither emissions-intensive nor trade-exposed, from the OBPS
    - Extend carbon pricing to vented, and fugitive and flared/destructed methane emissions
    - Using the review and update process to respond to lessons learned and new knowledge at least every five years and adjust the OBSs on an annual basis
- The compliance model should strike a balance between rewarding top 30th percentile performers, encouraging further emissions reductions in Canada and creating revenues for backstop jurisdictions.
- Next steps should include opportunities to increase industry's carbon-pricing readiness.

Timing

In the Framework, Environment and Climate Change Canada (ECCC) asked jurisdictions who want the federal backstop to be applied, in part or in whole, to communicate this decision by March 30, 2018. While this deadline has passed, the multi-stakeholder and sector-specific sessions to inform the development of the regulatory design are still underway. The regulatory process development should encourage provinces and territories to design and implement a carbon pricing system that is best-fitted to the economic base of their respective jurisdictions while delivering equivalent reductions as the federal benchmark. Consequently, jurisdictions should have access to the final design of the OBPS to evaluate its impact under their particular set of circumstances before making a decision.

Further, the above mentioned consultative sessions must remain impartial to jurisdictions' decisions to apply the backstop or not to avoid developing sector specific definitions and output-based standards that are skewed towards any particular jurisdiction. The output-based standards must represent Canadian, and not province specific, 30th percentile performance. Failure to do so would undermine the federal backstop's ability to safeguard the level of ambition it intended.

Design principles of the output-based pricing system

We support the five design principles on which ECCC is basing the design of the OBPS. We list these below along with additional important considerations to deliver and maintain strong carbon pricing systems throughout the country:

1. *Deliver incremental GHG emissions reductions: The OBPS should create incentives for incremental GHG emission reductions, meaning more emissions* (reductions) *would occur under the OBPS than in its absence.*

We believe that any credible climate policy should follow the principle of additionality, that is, in that case, whether a policy generates 'additional' emissions reductions that would not have occurred in the absence of the policy. Therefore, we fully support the first design principle of the OBPS.

2. *Minimize carbon leakage and competitiveness risks: The OBPS is designed to minimize carbon leakage by limiting impacts on competitiveness from carbon pricing for larger industrial facilities.*

These first two principles underscore the backstop's dual role of protecting emissions-intensive and trade-exposed (EITE) sectors against substantiated competitive risks and avoid leakage, while delivering mitigation outcomes. The backstop is the federal government's unique tool to expand carbon pricing across the country while ensuring that existing and new pricing systems continue to deliver emissions reductions and promote innovation. **It is paramount to set a reasonably ambitious backstop to ensure the sustained delivery of ambitious mitigation outcomes from carbon pricing across the country.** An ambitious backstop is one that also ensures long-term results and avoids losing policy wins in provinces where carbon pricing is already applied. Should existing pricing systems that originally met the benchmark be rolled back, the federal government still has the ability to hold the line on climate action by applying the backstop. A weak backstop, however, cannot serve this purpose.

The OBPS minimizes the risk of leakage by providing a subsidy to production, incentivizing EITE firms to maintain production even as input costs go up. Therefore, **the program should target only those sectors that can demonstrate material competitiveness pressures through both emissions intensity AND trade exposure.** It would otherwise be unfair to other parties within the system and to all parties participating in climate programs more broadly. This is also consistent with the ECCC's third design principle, below.

3. *Treat OBPS participants in a consistent manner: the design of output-based standards will be consistent within and across sectors and products.*

The broad framework for assessing and addressing sector competitiveness pressures should be clearly defined and applied consistently across sectors and firms subject to the OBPS — and, to the extent possible, aligned with the stringency of climate policies outside of the OBPS.

4. *Provide transparency: the OBPS will be implemented in a transparent manner*

Both the **development** and implementation of the OBPS should be done in a transparent manner. This implies that the methodology used for defining the OBSs as well as the reporting from companies should be fully disclosed and available to the public. We strongly believe that transparency and accountability are core principles of any credible climate policy.

5. *Commitment to review: the OBPS will be reviewed by 2022, in conjunction with the review of the overall pan Canadian approach to carbon pricing*

We support this commitment and provide further details on the review process in a later section.

Regulated facilities and voluntary participation in the output-based pricing system

We support a threshold of 50 kt CO_2e for inclusion in the OBPS and the option to voluntarily participate for facilities in backstop jurisdictions with annual emissions between 10-50 kt CO_2e since it aligns pricing obligations with current federal facility-level GHG reporting requirements. Leveraging the GHG reporting program maintains administrative simplicity for both government and industry while providing the data necessary to operate and a strong starting point to adapt the program as needed.

An OBPS, however, is meant to provide relief not for facilities that emit high volumes of emissions, but those that are both emissions-intensive and trade-exposed. Mandatory and voluntary participation in the OBPS should be based on the sector and facilities' level of emissions-intensity and trade-exposure. In a later section, we further discuss the importance of clearly and transparently defining these terms along with a consistent analytical framework for assessing the level of competitiveness pressure resulting from these factors.

Covered emission sources

We are supportive of the coverage outlined for the OBPS. Covering all emission sources that are currently accurately measureable — including emissions from both fuel combustion and from synthetically produced GHGs (e.g. from industrial processes and product use) — ensures that the full carbon footprint of industries are accounted for and that all possible reduction opportunities are pursued. In some instances, non-combustive sources of emissions may represent lowcost reduction opportunities that would not be motivated if these emissions were

excluded (eg, the use of carbon capture and utilization technologies to reduce process emissions in the cement industry).

ECCC's emission coverage should strive to align with international best practices. The Greenhouse Gas Protocol Scope 1 emissions (Direct Emissions) include fugitive emissions, defined as ''intentional or unintentional releases such as: equipment leaks from joints, seals; methane emissions from coal mines; HFC emissions during the use of air conditioning equipment; and CH4 leakages from gas transport.'' The federal methane regulations, aimed at

preventing methane from leaking (e.g., fugitive) or being otherwise wasted (e.g., vented emissions) in the oil and gas industry, will not fully come into force until 2023, reliquinshing significant annual emissions reudctions between now and 2023. We recommend that ECCC include vented, fugitive, and flared emissions from oil and gas facilities in the OBPS starting in 2020 to incentivize facilities to take earlier action and take advantage of low-cost mitigation opportunities that also reduce waste of resources. This expansion of the coverage is also consistent with the principle of treating OBPS participants in a consistent manner: every regulated entity's reported total emissions should accurately reflect real emissions. More broadly, we believe that in order to reach Canada's climate targets, all emissions need to be eventually covered under a carbon price, including methane emissions.

Output-based standards

Stringency

ECCC originally proposed in the *Technical Paper on the Federal Carbon Pricing Backstop* to set ''*the output-based standard (…) at a level that represents best-in-class performance (top quartile or better) in order to drive reduced emission intensity*.'' This original proposal was revised in the Framework to a ''*starting percentage for all output-based standards (of) 70% of the production weighted national average of emission intensity*.''

To preserve the backstop's ability to deliver ambitious carbon pricing systems across the country, we insist that **output-based standards should be established based on national production**, as ECCC proposes in the Framework, without exception.

During our participation in the ongoing multistakeholder and sector specific working groups, we have heard industry raise a range of special cases to lower the stringency of the policy, many of which were focused around issues of competitiveness and carbon leakage. For all the attention given to these concerns, it is important to note that **the risk of leakage as a result of competitiveness pressures is often overstated.** Indeed, the Ecofiscal Commission found that competitiveness pressures for British Columbia, Alberta, Ontario, and Nova Scotia are

''significant for only a few sectors, representing only a small share of total provincial economic activity.''[1]

Further, the debate around competitiveness pressure is being held in the absence of a clear definition for assessing these risks. ECCC should develop and consistently apply a clear methodology for assessing the level of competitiveness pressure and define a level of pressure that triggers inclusion in the OBPS. The Working Group on Carbon Pricing Mechanisms's approach should be reflected in this methodology:

The extent to which the competitiveness of a firm is negatively impacted by differential carbon pricing is largely determined by two factors:

- *the carbon emissions intensity of the firm's production, which is representative of the cost exposure of the firm to carbon pricing;*
- *the market power of the firm, or the ability of a firm to pass on increased costs to its buyers without significant loss of market share, which is often measured by the extent of the firm's trade-exposure.*[2]

Alberta's methodology for assessing the EITE level of a sector is also of guidance:

The EITE criteria are derived from an assessment of all sectors in the economy on their degree of emissions intensiveness and trade exposure. Sectors are assessed as high, medium or low emissions intensiveness and high, medium or low trade exposure. The criteria are then combined to determine an assessment of the EITE level of the sector. Only sectors that are considered high EITE (see figure below) using these criteria qualify as EITE sectors (...).[3]

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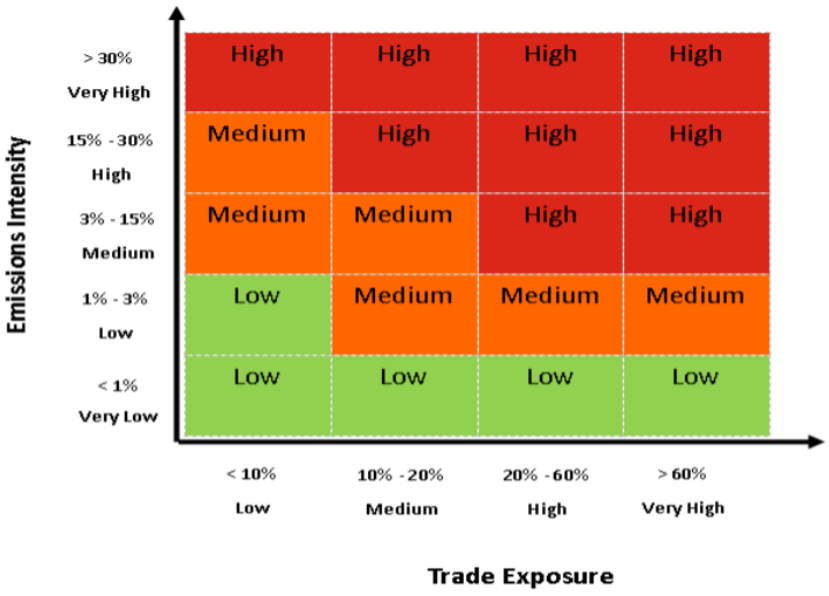
[1] Elizabeth Beale, Dale Beugin, Bev Dahlby, Don Drummond, Nancy Olewiler, and Christopher Ragan, *Provincial Carbon Pricing and Competitiveness Pressures- Guidelines for Business and Policy Makers* (November 2015), 2. http://ecofiscal.ca/wp-content/uploads/2015/11/Ecofiscal-Commission-Carbon-Pricing-Competitiveness-Report-November-2015.pdf

[2] Working Group on Carbon Pricing Mechanisms, *Final Report* (2016), p.40. http://publications.gc.ca/collections/collection_2016/eccc/En4-287-2016-eng.pdf

[3] Alberta Government, *Standards for Establishing and Assigning Benchmarks- Carbon Competitiveness Incentive Regulation* (December 2017), p.15. https://www.alberta.ca/assets/documents/CCI-standard-establishing-assigning-benchmarks.pdf



Caption: Emission Intensity and Trade Exposure

Source: Alberta Government, *Standard for Establishing and Assigning Benchmarks- Carbon Competitiveness and Incentive Regulation*, (December 2017).

Importantly, the competitiveness pressure analysis should isolate for the difference between the Canadian carbon price and the price in foreign jurisdictions and exclude the pressures caused by the array of other economic and policy factors that influence firm performance, including corporate income-tax rates, foreign-exchange rates, the prices of locally supplied inputs, wage rates, etc. If the OBPS is misused to address any other regional, market, resource quality, or technological issue, its success may be constrained.

The Ecofiscal Commission states, ‘‘the identification of competitiveness pressures also relies on firm-level data that is generally not publicly available.’’[4] We therefore support ECCC’s efforts to collect data from facilities across the country through the sectoral working groups. This will allow for a credible and transparent assessment of the competitiveness pressures on sectors. ECCC included (sub) sectors in the OBPS without providing data on the level of competitiveness pressures these sectors would be subject to under the full carbon price to justify a relief from the full price via their inclusion in the OBPS. For transparency, this data should be made available to the public in a timely maner.

[4] Elizabeth Beale, Dale Beugin, Bev Dahlby, Don Drummond, Nancy Olewiler, and Christopher Ragan, *Provincial Carbon Pricing and Competitiveness Pressures- Guidelines for Business and Policy Makers* (November 2015), 2. http://ecofiscal.ca/wp-content/uploads/2015/11/Ecofiscal-Commission-Carbon-Pricing-Competitiveness-Report-November-2015.pdf

Although less stringent than the Technical Paper's proposal of setting the standard at the level of top quartile or better, the Framework's proposed starting point of 70% of the production weighted national average of emission intensity (WNAEI) is sensible. For transparency, datasets on emission intensity and production at a facility level for each sector (that preserve facilities' anonymity), should be made available to the public in a timely manner. In the absence of this data, the value of our assessment of the appropriateness of the proposed standard is limited.

There may be cases that require adjusting the 70% of WNAEI value. However, clear definitions, triggers, thresholds and methods for doing so should be created and consistently applied. We identify three scenarios where such adjustements should be made:

- Datasets with high emission intensity outliers
    - The standard should not reward or encourage outdated, inefficient technologies or processes. Nor should the presence of a few low environmental performers reduce the percentage of firms for which the carbon pricing signal incentivizes mitigation efforts. These outliers increase the value of the WNAEI and hence of the OBS, weakening or even eliminating the signal for 2nd quartile facilities.
    - A trigger should be defined for eliminating low performance outliers from the calculation of the WNAEI. This could be based on the standard deviation value or the variance. It could also be a ratio between the outlier emission intensity value and the 2nd quartile. The lack of data limits our ability to propose what the value of these triggers should be.
- Industries with only a few facilities in Canada, therefore providing only a few data points, present a challenge in developing a standard based on the WNAEI. One possible solution is to use North American data to set the standard. A trigger equivalent to a minimum number of data points should be defined for using this alternative method.
- Sectors that demonstrate a high level of competitiveness pressure at the 70% of WNAEI standard
    - Industry claims that their inclusion in the OBPS does not provide sufficient relief should be substantiated by applying the methodology to assess competitiveness pressure (that ECCC should develop) at the discounted price of carbon delivered by the 70% of WNAEI standard (corrected for low performance outliers). Any such downward adjustment should be constrained to a level that modelling indicates will still ensure the needed mitigation of emissions.

We support ECCC's approach to increasing the stringency of the output-based standards over time. The standards should decrease yearly to ensure its ambition aligns with emerging data on a sector's GHG performance.

As underscored by the Ecofiscal Commission, ''carbon competitiveness pressures come from carbon price differentials between trading partners.''[5] Hence sectoral competitivity analyses should also be revisited as additional jurisdictions apply a carbon price.

As noted earlier, the output-based standards will be developed for each sector within the sectoral working groups. However, ENGOs ability to advocate for the policy principles on which to base the output-based standards to deliver meaningful emissions reduction and promote innovation is limited. Canadian ENGOs are faced with the challenge of allocating limited resources to inform the development of the ambitious set of policies contained in the Pan Canadian Framework on Clean Growth and Climate Change. The working groups require significant investment of time and resources and are deeply technical. Experience from other similar processes shows that principles of policy direction are often lost or obscured by technical elements. One possible solution is to place the onus on individual working groups to demonstrate how each standard respects the principles. Divergence from the principles may be acceptable if evidence is provided that justifies the treatment.

Electricity generation

We regret that ECCC did not respect its own transparency principle in the decision to include electricity generation in the OBPS. Electricity generation did not appear in the preliminary list of OBSs to be developed in the Framework released on January 31, albeit the document did note that ''consideration is being given to how to apply carbon pricing to offshore oil and gas production and to electricity generation.'' An electricity generation working group was put together and began its sessions in February before an inclusive discussion was held on including electricity generation in the OBPS.

The *Technical Paper on the Federal Carbon Pricing Backstop* states, "the aim of an (OBPS) 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."

Electricity fails both tests for inclusion in an OBPS. It is not of necessity "emissions intensive", as low or non-emitting alternatives exist and are now cost competitive with fossil alternatives. And it is not "trade exposed," as many jurisdictions have already implemented either explicit

[5] Elizabeth Beale, Dale Beugin, Bev Dahlby, Don Drummond, Nancy Olewiler, and Christopher Ragan, *Provincial Carbon Pricing and Competitiveness Pressures- Guidelines for Business and Policy Makers* (November 2015), 5. http://ecofiscal.ca/wp-content/uploads/2015/11/Ecofiscal-Commission-Carbon-Pricing-Competitiveness-Report-November-2015.pdf

carbon taxes on electricity generation, or implicit carbon taxes via policies such as renewable portfolio standards, and also because grid constraints (including the current design of electricity transmission) for replacing massive amount of our power with imported power is not possible. For those reasons, one can seriously question whether the inclusion of electricity generation will deliver incremental GHG emissions reductions, which is the first design principle on which OBPS is based — our understanding being that it could incentivise the reverse.

Further, the inclusion of electricity generation in the OBPS poses a design challenge that is hard to reconcile with the aim of an OBPS. Currently, 80% of Canada's electricity is produced from non-GHG-emitting sources. The inclusion of electricity generation in an OBPS where significant zero emission options exist will result in a large number of offset credits available for purchase on the market at a low price. This eliminates the financial incentive for regulated entities under the OBPS (or existing carbon pricing systems where offset credits would be accepted as a method of compliance) to transition to less emitting energy sources. It also provides a trivial incentive to developers of renewable energy to invest in new capacity. Alternatively, excluding renewable energy sources from the OBPS while offering a subsidy to fossil fuel sources, as is currently suggested for the electricity sector, amounts to penalizing the type of energy production that the government should be encouraging if it hopes to meet its Paris Agreement target.

Appropriate price signals allow decisions made today to create the electricity grid of tomorrow — one that is consistent with Canada's commitment under the Paris Agreement, its commitment to reaching 90% clean energy by 2030, and its longer-term decarbonization goals. Weakening the carbon price does not send the right signal to investors. An electricity sector OBPS, especially at the proposed standard of 420 t CO_2e/GWh, risks resulting in significant, unnecessary investments in new natural gas capacity, locking in emission intensive electricity generation for decades. Indeed, at the proposed standard, which is well above the most efficient achievable with natural gas (Alberta's Carbon Competitiveness Incentive Regulations set the standard at 370 t CO2e/GWh for the power sector, which is representative of the best natural gas technology commercially available), the OBS would fail to deliver a meaningful financial incentive to build new renewable capacity.

While natural gas has a short-term role to play in the energy transition in coal dominated grids (eg. through the conversion of coal units to gas), it is important to recall that the GHG merits of natural gas are diminished when considering upstream fugitive methane emissions, especially as recent research shows that these emissions have largely been underestimated and underreported by industry and government, potentially by a factor of two or more. Further, relying heavily on natural gas exposes the electricity market and consumers to price volatility. Finally, Canada will be giving up the economic opportunities associated with fostering a strong renewable energy sector that can then compete in global markets as nations step up efforts to

decarbonize their economies. In many parts of our country renewables have become more economic than natural gas, and grid optimization (eg. energy storage, load shifting, better forecasting) will greatly reduce the need for gas-fired backup.

In addition, ECCC's proposed standard for electricity generaiton is grossly inconsistent with its starting value of 70% of WNAEI. In 2015, Canada produced on average 140 grams of CO2 per kWh of electricity generated. [6] ECCC's proposed standard is 420 tonnes CO2e/GWh, 300% of WNAEI.

Canada's 7th National Communication and 3rd Biennial Report to the UNFCCC shows that strengthening and raising the ambition of the PCF is required to meet our Paris Agreement target. Fossil fuel electricity generation is the largest emitting sector in Canada. We cannot put Canada on a credible path to meet or exceed our national target for reducing GHG emissions without creating a strong signal to enable the transition to renewable energy.

Treatment of indirect emissions

Under the Greenhouse Gas Emissions Reporting Program, Canadian facilities are required to report total direct GHG emissions. Consequently, it is conservative to assume that Canadian facilities have not been collecting data on indirect emissions. The data that will inform the assessment of industrial sectors' competitiveness pressure levels to justify their inclusion in the OBPS and to calculate the weighted national average of emission intensity (towards determining the sector output-based standards) will also exclude indirect emissions. As noted earlier, we support ECCC's data collection campaign. However, in the interest of respecting the implementation timeline set out by ECCC we recommend that facilities not be asked to provide data on indirect emissions and that these not be considered for the first year of the OBPS.

However, in future years, the OBPS should account for indirect emissions associated with electricity, heat, and hydrogen imported by a facility to ensure fair treatment of facilities, regardless of technology choices (i.e. self-generate vs import electricity). ECCC should prepare and train facilities on reporting indirect emissions in 2019 to allow for the 2020 year to account for those emissions. From 2020 on, exports should be deducted from the facilities total emissions and imports added to the facilities total emissions. Priority should be given to reward renewable energy imports and disincentivize fossil fuel imports by applying appropriate emisisons factors.

[6] ECCC, *National Inventory Report 2017*, Table A13-1

Compliance units

The compliance model should strike a balance between rewarding top-30th percentile performers, encouraging further emissions reductions and creating revenues for backstop jurisdictions. This balanced compliance model also creates flexibility for regulated facilities in a system where compliance can be met in different ways, including:

- With offset credits generated by facilities with emissions intensity below the output-based standard. An expiry period for offset credit vintages should be created.
- With compliance payments. ECCC might want to require that a minimum compliance be met with compliance payments as a means to increase revenues for backstop jurisdiction and increase buy-in for the system by generating opportunities for further investment in innovation or for protecting lower-income households through tax credits.
- With offsets from verified sources to ensure additionality and quality of the emissions reductions. To increase benefits of the policy to Canadians, when compliance is met through offsets ECCC might want to require that a certain portion of these be from Canadian projects. This would induce additional low-cost abatement in sectors not covered by the carbon levy (or the carbon pricing system more broadly). The forgone revenue by jurisdiction is still "spent" on additional abatement in Canada.

Review and update

We adhere to the High Level Commission on Carbon Prices' view that "policy adjustments should be made based on criteria that are transparent and sound: policies should be "predictably flexible."[7] ECCC should have a clear schedule and criteria for reviewing and updating the OBPS. The reviews and updates should integrate the following elements:

- The evolution of emissions, emission intensities, and production should be monitored so that OBSs can be adjusted to trigger the required changes — whether it be to increase emissions reductions or reduce leakage risks by adjusting the OBS.
- Technology — both cost and diffusion — should be monitored with a view to offer an opportunity to respond to lessons learned and new knowledge.

[7] High-level Commission on Carbon Prices, *Report of the High-Level Commission on Carbon Prices* (2017), p.4. https://static1.squarespace.com/static/54ff9c5ce4b0a53decccfb4c/t/59b7f2409f8dce5316811916/1505227332748/CarbonPricing_FullReport.pdf

- The stringency of the OBS should increase by a pre-determined schedule, unless otherwise justified by the sector specific competitiveness pressure analysis.
- The 2020 update should cover indirect emissions as well as vented, fugitive and flared methane emissions from the oil and gas sector.

Next steps and engagement process

Ensure industry awareness of spending programs

We encourage ECCC to increase industry's carbon-pricing readiness and buy-in by ensuring incumbents are well-informed about support programs, such as the Low Carbon Economy Fund and programs from other ministries meant to support transformative low-carbon innovations and enhance the effectiveness of carbon pricing.

Conclusion

We welcome the opportunity to share with the Government of Canada our views on carbon pricing. We look forward to continuing to collaborate with the government as it further refines its approach.

The authors are happy to discuss any questions.

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