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Comments on the Clean Fuel Standard Proposed Regulatory Approach

Pembina Institute and Clean Energy Canada submission to Environment and Climate Change Canada

Dear Ms. Mellow,

Clean Energy Canada and the Pembina Institute are grateful for the opportunity to comment on the federal government's Clean Fuel Standard (CFS) Proposed Regulatory Approach (PRA), which outlines many key policy design decisions taken in light of stakeholder consultations held over the past several years.¹ The document is a constructive addition to the materials that Environment and Climate Change Canada (ECCC) has so far presented during this rulemaking, and represents a useful, comprehensive signposting of the government's intended directions on the road to a final standard for cleaner (liquid) fuels.

We generally support the policy directions indicated by Environment and Climate Change Canada (ECCC) in the June 2019 PRA paper. In our jointly held view, many of the policy design choices chart the right course for the Clean Fuel Standard—a critical part of the Pan-Canadian Framework for Clean Growth and Climate Change. We see the Framework as essential to orchestrating Canada's ability to meet its greenhouse gas targets and remain competitive in the growing, global clean economy. In turn, given the current gap to our 2030 emission mitigation target,² and the ongoing need for an ambitious, nationwide approach to reducing transportation emissions—responsible for roughly one-quarter of total Canadian GHGs—we see the Clean Fuel Standard as necessary to the full and successful implementation of the Framework.

With clean fuels already affordably reducing emissions by more than 4.1 MtCO₂eq per year, a strong clean fuel standard would further stimulate economic activity and employment in the clean fuel sector by up to \$5.6 billion and 31,000 people by 2030. Moreover, the standard will also be affordable for Canadians, with an estimated average household cost of \$2 a month in 2025.³

We commend Environment and Climate Change Canada (ECCC) for its persistence in pursuing the development of a complex and novel set of regulations within an ambitious timeframe—while at the same time respecting and supporting the need for thorough consultations with a diverse array of

¹ Environment and Climate Change Canada [ECCC], *Clean Fuel Standard: proposed regulatory approach* (June 2019). <https://www.canada.ca/en/environment-climate-change/services/managing-pollution/energy-production/fuel-regulations/clean-fuel-standard/regulatory-approach.html>

² ECCC, *Canada's Greenhouse Gas and Air Pollutant Emissions Projections* (2018). <https://www.canada.ca/en/environment-climate-change/services/climate-change/greenhouse-gas-emissions/projections-2018.html>

³ Navius Research, EnviroEconomics, *Analysis of the Proposed Canadian Clean Fuel Standard: Final Technical Report* (2017). <http://cleanenergycanada.org/wp-content/uploads/2017/11/CFS-technical-report.pdf>

stakeholders. Despite the challenges of crafting a policy that continues to generate a great deal of public interest, the department has retained a laudable focus on ensuring that the CFS fulfills what we see as its primary policy objectives: reducing greenhouse gas (GHG) emissions by 30 megatonnes—incremental to other policies—annually by 2030, and facilitating the emergence of a cleaner, low-carbon transportation sector. With this in mind, we are encouraged by ECCC’s explicit articulation within the PRA of supplementary objectives for the regulation, i.e. “to stimulate investments and innovation in low-carbon-intensity fuels while enabling low-cost compliance” (9, 63).⁴ Yet, while working to ensure low-cost compliance is an important aim for any regulator, it is equally important to remember that the scale of the decarbonization challenge means costs can rise quickly, even under efficient policies.⁵

The comments in this submission apply to the June 2019 paper on the proposed regulatory approach for the liquid class regulations. We begin with a set of general comments presenting our key reflections on the PRA. Following this, we concentrate selectively on what we view as the most promising aspects of the policy directions outlined by ECCC. In addition to specifying the regulatory design choices we support, we also identify areas of concern, and offer comments and recommendations organized according to the format of the PRA. We look forward to seeing these comments reflected in the publication of the draft regulation on liquid-class fuels in the Canadian Gazette, Part 1, in 2020.

General Comments / Key Issues

Under the current design proposal, there is a danger that the objective of long-term decarbonization of transport will be undermined by the ability of obligated parties to seek compliance largely, or even exclusively, through the use of credits generated in compliance category 1 (reducing carbon intensity throughout the lifecycle of fossil fuels). While we support the idea of using the CFS to incentivize cleaner fossil fuel production, a balance must be struck between this set of compliance opportunities and the others (categories 2 and 3), which clearly possess greater long-term potential to achieve deep decarbonization outcomes—particularly in the transport sector—beyond 2030. Under the current design, modelling results (based on parameters determined by ECCC) suggest it is highly likely that primary suppliers’ reliance on compliance category 1 credits will substantially erode the signal for increased investment in, and hence supply of, domestic low-carbon (i.e. non-fossil) fuel volumes, production capacity, and clean fuel-switching opportunities.⁶

By its own account, the Canadian fossil fuel industry anticipates being able to reduce the carbon intensity of bitumen production by 10-30% within the next five years^{7,8}; independent analysis has similarly indicated that per-barrel carbon intensity improvements of 16-23% in the oil sands are possible by 2030, suggesting an even higher lower bound on the range estimated by industry

⁴ Unless otherwise indicated, bracketed numbers in this text refer to page numbers in the Clean Fuel Standard Proposed Regulatory Approach (fn. 1).

⁵ Dave Sawyer and Chris Bataille, *Taking Stock: Opportunities for Collaborative Climate Action to 2030*, Policy Brief 2: The Pan-Canadian Framework on Clean Growth and Climate Change (March 2017), p. 7. <https://drive.google.com/file/d/0B9FT5KrVwYmwOThZYUUh2WlpKTWc/view>

⁶ Results based on modifications to modelling prepared for Clean Energy Canada by Navius Research (fn. 3).

⁷ Canadian Oil Sands Innovation Alliance, “COSIA marks fifth consecutive year of progress in oil sands innovation,” (2018). <https://www.cosia.ca/resources/news-releases/cosia-marks-fifth-consecutive-year-progress-oil-sands-innovation>

⁸ Clean Resource Innovation Network, “Innovation Energy: Oilsands step up to take on clean tech challenge,” (2019). <https://cleanresourceinnovation.com/news/innovation-energy-oilsands-step-up-to-take-on-clean-tech-challen>

groups.⁹ Given that (i) GHG emissions from the oil sands alone were 81 Mt in 2017¹⁰, (ii) all upstream/refinery improvements (additional to other legal/regulatory requirements) will be creditable and useable for compliance, and (iii) the commission date from which category 1 projects will be eligible for credit creation was advanced by five years (from 2021 to July 1, 2017), there is a risk that actions taken under compliance category 1 will effectively negate the possibility for any significant portion of the liquid-class obligation of 23 Mt to be satisfied through actions taken under compliance categories 2 and 3.

Further, the numerous compliance flexibilities offered under the PRA, when combined with unlimited crediting of fossil fuel process efficiency projects (compliance category 1), could cumulatively equal *at least* 16 Mt CO₂e of liquid-class reductions. ECCC has estimated that fossil fuel process improvements could generate between 8.8 Mt and 11.3 Mt of credits.¹¹ The allowance for 10% of firms' obligation (i.e. 2.3 Mt) to be met through cross-stream trading, and for another 10% to be managed via deferrals, suggests an additional combined 4.6 Mt flexibility. Together with fossil fuel process improvements, these flexibilities therefore account for about 70% of the liquid-class requirement (which is, in turn, 77% of the overall CFS target). However, this estimate is conservative, as it includes neither early action credits, nor the *Renewable Fuel Regulations* surplus credit roll-over, nor contributions toward the Compliance Fund Mechanism.

In sum, we believe that the cumulative effect of the proposed regulatory design, as presented in the PRA, may be to substantially compromise the long-term 'scale-up' potential of this key climate policy. The Clean Fuel Standard can only live up to its name and original promise if ECCC remains true to a holistic conception of 'partitioning' the transport sector (as indicated in the 2017 CFS Regulatory Framework). Such a conception implies more than a simple limit on cross-stream credit trading; it also means that a robust policy signal must be sent for *increased* supply and use of non-fossil, low-carbon fuels, including conventional and advanced biofuels, non-fossil synthetic fuels, electric vehicles (EVs), and renewable gases (renewable natural gas, 'green' hydrogen). Unlike fossil fuels, these clean energy technologies represent viable pathways to achieving deeper emission-reduction goals in the crucial years after 2030 and before mid-century. But, in order to travel those pathways, Canada must prepare the way by seizing today's opportunity to leverage the CFS—and, in particular, demand for compliance category 2 and 3 credits—as a means of reducing clean fuel costs, maturing clean fuel supply chains, and scaling domestic clean fuel production capacity and use.

Detailed Responses

Application and Exemptions

Parties regulated under the Clean Fuel Standard: "primary suppliers"

- **Recommend removal of threshold for regulated parties** - ECCC has set a threshold of 400 m³ of liquid fossil fuel under which any primary supplier that produces or imports fuels will not be subject to CFS regulations. It is unclear how many suppliers within Canada fall into this exempted class and what impact this limit on the pool of obligated parties will have on

⁹ Kevin Birn, "Greenhouse gas intensity of oil sands production: today and in the future", IHS Markit: September (2018). <https://ihsmarket.com/products/energy-industry-oil-sands-dialogue.html>

¹⁰ Environment and Climate Change Canada, National Inventory Report 1990-2017: Greenhouse Gas Sources and Sinks in Canada (2019), Part 3, Annex 10, Table A10-2.

¹¹ ECCC, "3 - Carbon Intensity Reduction Requirement for the Liquid Stream," Powerpoint presentation, CFS Technical Working Group, Meeting #9 (Jan. 15, 2019). Available through CentralCollab.

carbon reductions. If the threshold continues to be upheld, we recommend that ECCC assess the number of primary suppliers not covered by the regulation, calculate the share of liquid fossil fuels these firms supply to the domestic market, and publish these figures annually to enhance public understanding of the market/policy coverage of the CFS.

Liquid fossil fuel subject to the annual reduction requirements

- **Agree** – Self-produced and used fuels in the liquid stream should count under life-cycle production of those fuels. In the liquid fuel stream, self-produced and used fuels will not have separate carbon intensity reduction requirements.
- **Agree** – Any fuels used for transportation purposes (i.e. movement of persons or goods on-site) should be subject to reduction requirements.

Carbon intensity reduction and minimum low-carbon-intensity fuel content requirements

Minimum low-carbon-intensity fuel content requirements

- **Agree** – We agree with ECCC's intention to incorporate the minimum renewable fuel content requirements of the federal Renewable Fuels Regulations. We believe that ECCC has mandated realistic baselines for minimum renewable fuel content of 5% in gasoline and 2% in distillates. Indeed, these requirements are already being met. Nonetheless, retaining the federal volumetric mandates—with clear timing on the wind-down of the old policy and clear terms for the transition to compliance with the CFS (20)—will help to preserve market access for renewable fuels and sustain investment in this key compliance-enabling sector.

Credit Creation Activities

Compliance category 1: Actions throughout the lifecycle of a fossil fuel that reduce its carbon intensity
Additionality of emission reductions

- **Agree and Recommend** – We believe that the list of project types that are not additional is comprehensive and that the allowance for 'double-crediting' under the BC LCFS is reasonable. However, we recommend ECCC take measures to preserve the partition between transportation and stationary combustion, in order to ensure the policy incentivizes decarbonization of the transportation sector. We believe this goes beyond our argument below (p. 7, this document) for limiting overall compliance flexibilities (Compliance Fund Mechanism contributions, cross-stream trading, etc., as listed in Table 7 of the PRA). Although ECCC clearly does not consider credits from refinery process improvements to be a 'flexibility'—they are, rather, just another set of compliance options—the issue of policy overlap and the risk of non-additionality (vis-à-vis offset credits under the federal Output-Based Pricing System) are most salient when analysing category 1 compliance strategies. The more rigorous and accurate the determination of additionality for credit-earning category 1 projects, especially as relates to carbon pricing, the better positioned Canada will be to fill the policy gap to its 2030 target and increase its decarbonization ambition in future years.
- **Recommend** – Projects that receive credits under compliance category 1 should not be in receipt of direct or indirect financial support delivered via the fund (or funds) supplied by the Compliance Fund Mechanism of the CFS. By making Compliance Fund payments, obligated parties will have already earned credits to offset a portion of their requirement under the CFS. To allow crediting of projects funded in part or in whole by the Mechanism would be to enable a form of double-crediting and, therefore, to weaken the stringency of the CFS emission reduction target. Placing this constraint on the credit eligibility of category

1 projects would also generally be consistent with the PRA direction for the Compliance Fund Mechanism to “[obtain] greenhouse gas emissions reductions *in the short term*” (44, emphasis added).

Date of commissioning for eligible projects

- **Disagree and recommend** – ECCC has indicated that the earliest possible date of commissioning for eligible projects was pushed back from 2021 (the date of publication in Canada Gazette, Part 2) to July 2017. Retroactive crediting is non-additional, risks contributing to oversupply in the credit market, and may reduce total emission reductions. We recommend reverting to the original date of eligibility or, at minimum, to the period following publication of the draft regulation in Part 1 of the Canada Gazette in 2020.

Extension of credit generation potential to non-obligated industrial facilities

- **Recommend limiting credit eligibility of carbon capture projects to those operating within the fossil fuel lifecycle** – Given widespread scientific acknowledgment of the need for Carbon Capture and (Use) Storage (CC(U)S) to achieve deep decarbonization outcomes, it is understandable that ECCC would want to create an additional policy incentive for industrial carbon capture projects (whether for use or storage). However, allowing credit generation for projects outside the lifecycle of fossil fuels would deter progress toward the annual reduction requirement and, further, violate two fundamental policy design principles, according to which compliance pathways must be both technology-neutral (i.e., giving no preferential treatment to particular solutions) and performance-based (i.e., linked to the lifecycle carbon intensity of liquid fuels).¹² Industrial facilities bearing no direct relationship to the production of fossil fuels should not be eligible for credit-creation in the liquid (or any other) class.

Asymmetry in regulatory treatment of exported fuels

- **Recommend equal treatment of fossil and non-fossil fuel exports** – For the purpose of credit generation, the PRA draws a distinction between fossil fuel exports and low-carbon fuel exports without explaining why asymmetrical treatment is justified. Under low carbon fuel standards implemented in other jurisdictions, such as California and British Columbia, the generation of upstream/refinery credits is (or will soon likely be)¹³ proportional to the fuel supplied to the jurisdiction or market in question. Under the PRA, primary suppliers will receive full credits for exported volumes of crude oil and refined petroleum products that have benefited from upstream improvement projects (category 1 compliance activities) (21). Meanwhile, low-carbon-intensity fuels produced or imported for the purpose of export will not be eligible for credit creation, or will be subject to a credit cancellation requirement (47). To ensure the full and credible achievement of the 23 Mt liquid-class reduction target, we again recommend that Canada’s CFS adhere to a technology-neutral approach, whereby emissions reductions attributed to volumes of ‘modified’ (i.e., lowered-CI) fossil fuels are pro-rated to account only for the share of those fuels entering the domestic market.

¹² Environment and Climate Change Canada, “Compliance Pathways Initial Principles,” Powerpoint presentation, CFS Technical Working Group, Meeting #2 (March 1, 2018). Available through CentralCollab.

¹³ British Columbia Ministry of Energy, Mines, and Petroleum Resources, Low Carbon Fuels Branch, “B.C. Low Carbon Fuel Standard: Refinery Improvement Credits Discussion Paper,” (July 5, 2019), 5. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/electricity-alternative-energy/transportation/renewable-low-carbon-fuels/refinery_credits_discussion_paper.pdf

Compliance category 2: Supply of low-carbon-intensity fuels

- **Recommend removal of minimum threshold of improvement to request new carbon intensity value** – ECCC has set a minimum threshold of 1 gCO₂/MJ or 5% difference (whichever is greater) between the current value and proposed new value as a requirement for opt-in parties to submit a request for a new carbon intensity value. As marginal abatement becomes more difficult and more expensive, it may be desirable to eliminate such thresholds to encourage continual CI reductions. Moreover, it is not clear whether this threshold applies to only one process reduction or whether, alternatively, it can be compiled across several fuel production processes. To illustrate, it is not clear whether a low-carbon fuel supplier that reduces a fuel's CI at its feedstock production stage by 2.5% and feedstock transformation stage by 2.5% is eligible to request a new carbon intensity value.

Land-use change

- **Agree and Recommend** – We agree to the inclusion of indirect land use change (ILUC) requirements via sustainability criteria. However, while this represents a positive step, it is not a permanent solution, and cannot in the long-term be a comprehensive substitute to accounting for ILUC in the carbon intensity of all biofuels. While the outlined sustainability criteria will ban or limit feedstocks with the worst ILUC impacts, if the ILUC impacts of the remaining biofuels are not being accounted for, the net carbon reductions resulting from the CFS could be significantly less than claimed. Therefore, it is still important to work towards eventually including ILUC in the carbon accounting for all fuels, including as part of the mid-term review. We recommend that ECCC evaluate what studies, data collection activities, and research funding may be necessary to obtain provisional, Canada-specific values—including for imported fuels—for the indirect land use change portion of biofuels' carbon intensity scores. This will enable the government to take a more informed decision during its planned midterm policy review as to the consequences of including that score within pathways assessed using the Fuel Lifecycle Assessment Modelling Tool.

Compliance category 3: Specific end-use fuel switching in transportation

Credit creators for electric and hydrogen fuel cell vehicle charging

- **Agree** – We agree with the methodology presented by ECCC to assess credit generation for electricity and hydrogen used for transportation.

Requirement to reinvest electric vehicle charging credit revenue

- **Agree** – We agree with the EV credit reinvestment requirement to further incent the adoption of zero-emission vehicles.
- **Recommend removing reinvestment pathway '(c)'** – ECCC has stated it will mandate a portion of electric vehicle credit revenue to be reinvested to further incent the adoption of zero-emission vehicles. While reinvestment pathways '(a)' and '(b)' provide guaranteed actions and high effectiveness in this regard, pathway '(c)' has the potential to be misused. With Original Equipment Manufacturers (OEMs) now proposed as the default credit creators, this may allow OEMs to claim routine advertising expenditures as eligible credit reinvestment activities.
- **Recommend changing the range for fraction of credit revenue that must be reinvested** – We believe that the specified range of 50% - 100% is very broad and, further, that the potential opt-in credit creators for electric vehicle charging are not homogeneous in the set of incentives they bring to the policy goal of displacing petroleum fuel consumption through increased electrification of the vehicle fleet. To eliminate the risks of non-compliant credit revenue expenditure while ensuring fair treatment across category 3 parties, we

recommend that the reinvestment requirement imposed on all voluntary credit generators, except site hosts, be set at 100%.

Market flexibility and stability mechanisms

- **Recommend cap on cumulative credit generation from flexibility mechanisms** – While we agree that including flexibilities can be important to ensuring cost-effectiveness, the sheer volume of flexibilities that ECCC has proposed to provide to regulated parties under the CFS has the potential to drastically reduce the effectiveness of the program. The CFS aims to reduce the carbon intensity of fuels used in transportation, buildings and industry. After conducting a modelling exercise of the CFS design (as currently proposed), Clean Energy Canada estimated that the cumulative impact of flexibilities considered in the regulatory design paper is at least 16 MtCO₂ eq. or approximately 70% of the liquids obligation, with the potential to be much higher since this estimate does not account for early action credits, the emissions reduction fund (Compliance Fund Mechanism) or the ability of regulated parties to bank credits without limit. Cumulatively, these flexibilities will drastically reduce the effectiveness of the policy, especially in terms of decarbonizing the transport fuel mix. In our view, this is one of the most crucial issues that needs to be addressed going forward. To maintain the signal for increased supply of clean fuels and fuel-switching opportunities, we recommend setting a cap on the cumulative use of flexibilities by individual primary suppliers. During any single compliance period (i.e., annually), we propose that flexibilities should constitute no more than 20% of any individual primary supplier's compliance package. The existing proposed limits on specific flexibilities (e.g., 10% cross-stream trading and 10% Compliance Fund Mechanism contributions) could remain the same but would be subject to the overall limit.

Renewable Fuel Regulations compliance unit bank roll-over

- **Agree** – We agree with the methodology that will see credits from the phase out of the Renewable Fuels Regulation roll over into the compliance unit bank in 2022.

Using credits from other classes for liquid class compliance

- **Recommend adding flexibility with regard to use of credits from other classes for liquid class compliance** – ECCC allows a regulated party to use credits from the gaseous or solid fuel classes to satisfy up to 10% of its liquid reduction requirement. As marginal reductions get more expensive and difficult, it would be in the best interest of the program to maximise flexibility within this pathway by allowing regulated parties to split this ratio between the solid and gaseous fuel classes in any combination, as long as the combined use between the two classes is less than or equal to 10%.

Deficit carry-forward

- **Agree and Recommend** – We support a carry-forward flexibility but recommend a 5% maximum on any firm's individual reduction requirement. Moreover, to ensure carried-forward obligations are employed as a 'flexibility of last resort', we recommend ECCC bar primary suppliers' access to this pathway until they have also exhausted other alternative flexibilities (cross-stream trading, emissions reduction fund, etc.). The primary objective of any carry-forward should be to address small credit deficits that may have resulted from accounting errors, program changes or methodological changes. We agree with the stipulations for maximum term of two years before the deficit must be satisfied and for a 20% rate of annual interest (25% if access to the flexibility is unconstrained).

Compliance Fund Mechanism

- **Caution** – ECCC has suggested it will approve a list of multiple funds that would be eligible to receive Clean Fuel Standard contributions. Regulated firms exercising their option to offset up to 10% of their annual obligation through the Compliance Fund Mechanism would be able to select the approved fund to which they would contribute. However, the proposal for multiple funds could introduce substantial administrative complexity and also limit transparency (for instance, it would require periodic re-certification or re-approval of funds in order to assess ongoing adherence to the eligibility criteria) (45). Further, in allowing for the certification/eligibility of multiple funds, which would likely be smaller and more prone to invest in one-off projects (relative to a ‘single-fund’ alternative), ECCC may lose the opportunity for deeper reductions enabled through a larger fund that targets complementary projects underwritten by a broader strategic vision. We suggest ECCC monitor projects supported through the Fund Mechanism in order to better assess additionality in any future policy review (of the CFS or climate programs more broadly).

Review of the Clean Fuel Standard

- **Recommend** – The first CFS policy review (after final implementation) was previously anticipated to run concurrent to the review of the backstop federal carbon pricing system, expected in 2022. Under the PRA, it now appears the review may not take place until as late as 2027 (this assumes the base year of reference is 2022, when the liquid class regulations enter into force). While we expect the regulation (and, in particular, compliance performance) will be subject to continual monitoring, we believe that the CFS should still undergo formal review by 2025 at the latest. We commend the requirement for a policy review but recommend a clear definition of the meaning of “five years” be included in the regulation. Should a course-correction on policy be necessary in order to meet the increasingly stringent obligation schedule, 2027 would likely be too late to make that correction in time to safeguard the overall mitigation target of 30 megatonnes by 2030.

Conclusion

We offer these observations and recommendations for the consideration of ECCC staff in a spirit of collegiality, as they work to ensure the CFS advances to the fullest possible extent the aims established under the Pan-Canadian Framework on Clean Growth and Climate Change. The CFS is a critical regulatory program and must play an effective role in Canada’s efforts to mitigate climate change, reduce fossil fuel reliance, and spur the development of low-carbon fuels and alternative energy sources. The regulatory design choices made over the next few months will significantly influence Canada’s ability to meet not only its 2030 climate target, but also its broader, long-term ambition for a deeply decarbonized economy by mid-century.

We thank ECCC for devoting attention to our submission and we look forward to further engagement on this crucial policy file in the months leading to draft publication in *Canada Gazette*, Part I. Should you have any questions regarding our comments, we would welcome the opportunity to discuss them further in person.

Sincerely,

Fernando Melo, Clean Energy Canada

Shahid Hossaini, Clean Energy Canada

Bora Plumptre, Pembina Institute