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To whom it may concern:

These are the comments of the David Suzuki Foundation and Queen's University on the Clean Fuel Standard (CFS) Regulatory Design Paper for liquid fuels, published December 20, 2018.

Implementing the CFS will promote low-carbon energy sourcing in the transportation, industrial and building sectors and help achieve Canada's emission reduction targets. Our comments on the Regulatory Design Paper draw on findings of the Trottier Energy Futures Project.¹ The energy scenarios developed by the TEFPP suggest that the most significant change required in order to reduce carbon emissions in Canada by 80 per cent by 2050 (relative to 1990 levels) is to progressively reduce reliance on fossil fuels to meet energy-based end uses, from 74 per cent today to 25 per cent or (very likely) less in 2050. This change in end uses will require electricity supply to increase from 22 per cent of total energy to 60 per cent (or more), and for biomass/biofuels to increase from four per cent to 15 per cent (or more). A robust CFS can help drive this transition.

The Regulatory Design Paper proposes a number of important elements for liquid fuels. We support the move to measure energy efficiency ratios as a means of encouraging electrification and fuel switching in the transportation sector; the inclusion of electricity under the credit generation framework; a fair and soundly designed fuel partitioning arrangement; and the commitment to recycle revenues into multi-sectoral decarbonization initiatives, including infrastructure and electric vehicle charge points. We also believe that the CFS could contribute to the electrification of medium and heavy-duty vehicles through credit generation and reinvestment, as supported by evidence in

¹ The Trottier Energy Futures Project was a collaborative study led by the Trottier Family Foundation, the Canadian Academy of Engineering and the David Suzuki Foundation to assess and select strategies for reducing GHG emissions in Canada in line with the global imperative to halt climate change. The final report is available for download at: https://www.cae-acg.ca/wp-content/uploads/2013/04/3_TEFPP_Final-Report_160425.pdf

California. Reinvestments in the electrification of the transportation sector can contribute to EV uptake and contribute to incremental greenhouse gas abatement.

However, other aspects of the regulatory design will need to be strengthened to ensure the CFS is an effective tool. We offer the following recommendations:

1. Include sustainability criteria to avoid potential and unintended ecological impacts from direct and indirect land-use change;
2. Integrate expanded renewable fuel regulations (i.e., volumetric requirements);
3. Establish facility-based and crude-specific carbon intensity values, instead of national averages;
4. Ensure that competitiveness considerations are evidence-based, targeted and time-limited;
5. Implement a robust credit trading system that supports decarbonization objectives;
6. Develop an approach and timelines for the inclusion of aviation fuels;
7. Ensure a robust approach to governance and policy oversight; and,
8. Signal intention to align CFS emission reduction targets with decarbonization objectives.

1. Include sustainability criteria to avoid potential and unintended ecological impacts from direct and indirect land-use change

Specific criteria should be included to avoid direct land use change (DLUC) in the regulations once they come into force. The exclusion of indirect land use change (ILUC) from coverage must be addressed before the announced 2025 review date. Research incorporated in the Trottier report shows that Canada could increase biofuels production at least 10-fold current levels while still meeting robust sustainability criteria and without impacting production of food for domestic purposes or wood for the forest sector.

Direct land-use changes occur when feedstock for renewable fuels is sourced from modification of land. They are almost always problematic and are of particular concern when the land in question has high ecological value. In fact, the first consideration noted on page five of the Regulatory Design Paper describes such “direct” impacts. The regulations should include robust DLUC-specific criteria, including the ineligibility of (not just limits on) feedstock sourced from conversion of lands with high biodiversity, critical habitat of species at risk, and high carbon stock. DLUC-related criteria can and should be implemented immediately once the regulations come into force.

In addition, the regulations must specify a timeline for the inclusion of ILUC-specific criteria. The longer the CFS is in place without provisions governing ILUC, the more difficult it will be to integrate ILUC requirements as part of the protracted procurement and review processes. For aspects of ILUC that require modelling, ECCC should commission appropriate research and build on the work of other jurisdictions with ILUC models.

2. Integrate expanded renewable fuel regulations (i.e., volumetric requirements)

As noted in our 2017 submission on ECCC’s Clean Fuel Standard Discussion Paper, we recommend that the CFS incorporate the existing Renewable Fuel Regulation, and that enhanced volumetric requirements be put into place. This will help to establish significant new, low-carbon

energy sources across sectors. Demand-side measures to increase renewable and alternative fuel use will be critical in driving innovation.

We urge ECCC to reconsider the proposal to not set a volumetric renewable fuel standard for natural gas. The Trottier Energy Futures Project highlighted the need for rapid changes, including in the industrial and buildings sectors, and this will require investment in new technologies. Extending the Renewable Fuel Regulation within the CFS to include a volumetric requirement for natural gas would drive a stepwise transformation in energy use across these sectors in a timely fashion. Allowing natural gas use to expand today without developing renewable alternatives simply creates a larger problem for tomorrow. Extending the Clean Fuel Standard as described would serve to ensure critical sectors are moving faster to meet GHG emission reduction targets.

3. Establish facility-based and crude-specific carbon intensity values, instead of national averages.

We support the inclusion of regular reviews of carbon intensity values, as these values must be adjusted to reflect real world data that is up-to-date and reflects both spatial and temporal considerations. In this regard, it is important to note that the emissions intensity of fossil fuels vary significantly between production types as well as between facilities, and that intensity can change over time at individual facilities depending on the type of resource they are accessing. ECCC should develop an approach to incorporate facility-based emissions intensity values, updated regularly, which reward more efficient facilities while encouraging production types with higher emission intensities to improve their performance.

An approach to life-cycle assessment that more accurately considers upstream variance in emissions intensity is possible with a robust fuel tracking system. In the interim, ECCC should develop separate values for crude types (i.e., oilsands, heavy oil, conventional light, unconventional, offshore, etc.). A comparable approach should be applied to gaseous fossil fuels, including by type and origin, as well as considerations on the stringency and effectiveness of methane regulations in the jurisdictions from which a gas originates. The individual reference values or ranges should be published and made accessible to industry and investors to guide research, development and demonstration.

4. Ensure that competitiveness considerations are evidence-based, targeted and time-limited

Issues related to carbon leakage and competitiveness can be solved in a timely manner, and further delaying full implementation of the CFS should be avoided. The federal government has a number of tools at its disposal to address concerns in this area, including incentives, additional regulations and border-carbon adjustments.

The emissions-intensive and trade-exposed task group must not become a vehicle for undue industry influence in the CFS consultation process. ECCC should specify and make public the kinds of evidence the committee may present to substantiate competitiveness concerns, and ensure that adjustments made in response to task group concerns are targeted and time-limited.

5. Implement a robust credit trading system that supports decarbonization objectives

The CFS should prioritize the production and use of renewable low-carbon fuels. Enabling credit generation from fuel switching to gaseous fossil fuels will instead promote continued investment in fossil fuel infrastructure, delaying the necessary transition to a low-carbon future (i.e., through

investment lock-in effect). Fuel-switching to other fossil fuels (e.g., natural gas, propane) should not be eligible for credit generation.

Moreover, ECCC should make every effort to prevent speculation, protect future credit market integrity and support other emissions reduction objectives. In this regard, we are encouraged to see that credit generation and trade will be subject depreciation and expiration, and other tools should be explored.

6. Develop an approach and timelines for the inclusion of aviation fuels

Aviation has a disproportionately large impact on the climate system. Unaddressed, it will be a growing source of emissions. High-altitude emissions have a more harmful climate impact due to resulting chemical reactions and atmospheric effects, with the IPCC estimating aircraft climatic impacts at about two to four times greater than the effect of their carbon dioxide emissions alone. Although voluntary market-based instruments are being discussed at the international level, these measures in their current state will be insufficient to curbing aviation emissions.

The inclusion of credit generation for renewable and other low-carbon intensity aviation fuel use in the sector is a good first step. Such credit generation should be extended to international flights originating from Canada. In addition, we recommend defining a clear process and timelines for the application of carbon intensity requirements under the CFS to aviation fuels. This will help drive innovation in renewable and alternative aviation fuels as well as to incentivize fleet renewal and uptake of more fuel-efficient aircraft.

7. Ensure a robust approach to governance and policy oversight

The Fuel Life-Cycle Assessment Modelling Tool should follow the methodology and system boundaries as described by International Standards Association ISO 14044:2006. The tool should be updated regularly and should include a comprehensive life cycle inventory that reflects Canadian values, rather than generic figures. Furthermore, ECCC should ensure that ongoing stakeholder consultation goes beyond industrial sectors, and includes academic and non-governmental organizations. Finally, the regulations should establish robust monitoring, reporting and verification requirements, both in terms of emission intensity determination and credit generation.

8. Signal intention to align CFS emission reduction targets with decarbonization objectives

The CFS is an essential component of an effective climate policy and must be implemented in a way that is aligned with climate science and longer-term decarbonization objectives. While we recognize Canada's commitment to achieving emission reductions of 30Mt by 2030 through the CFS, it will be important to contemplate increasingly stringent carbon intensity reductions to further reduce emission beyond the 2030 milestone. As noted by the Intergovernmental Panel on Climate Change, to limit rise in average global temperatures to 1.5 C, anthropogenic greenhouse gas emissions should decline by 40 to 60 per cent by from 2010 levels by 2030 and reach net zero by the middle of the century. The CFS should be designed to align with Canada's mid-century decarbonization policy objectives.

The Regulatory Design Paper offers a promising starting point, and technical analysis has demonstrated that the 30Mt of annual GHG reductions by 2030 is an achievable objective. Timely implementation of the CFS will be critical in bending Canada's emissions curve, and further delays in policy delivery should be avoided. Canada should build on the success of British Columbia's Renewable and Low Carbon Fuel Requirements Regulation, which has resulted in about 10 per cent of emissions being avoided in that province between 2010 and 2016. Comparable emission reductions are expected as a result of California's low carbon fuel standard. Moreover, the CFS will drive clean growth, benefiting Canada's economy as well as the environment. As noted in a study by Clean Energy Canada, the policy could result in near \$5 billion in new economic activity.

In our opinion, the CFS can be further strengthened to optimize its effectiveness by addressing the above-noted concerns and recommendations. We appreciate the opportunity to provide comments on the CFS Regulatory Design Paper and look forward to the draft regulations in the coming months.

Sincerely,



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