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Introduction

The Conservation Council of New Brunswick (CCNB) welcomes this opportunity to respond to the federal discussion paper on a clean electricity standard in support of a net-zero electricity sector. This submission builds on our recent submission focused on priority principles and key outcomes for a clean electricity standard. That April 15th submission was endorsed by a number of environmental groups, including CCNB. Since that time, two New Brunswick groups (New Brunswick Anti-Shale Gas Alliance and the Sustainable Energy Group) have also signed on.

This submission begins by restating our objectives and priority principles and responds to discussion paper questions, with a particular focus on managing social impacts and enforcement issues. Our interest in the social impacts and enforcement aspects of a clean electricity standard mean we focus on "other considerations" in our response to the discussion paper. We also comment on the treatment of biomass in the CES because New Brunswick is considering using wood pellets at the Belledune Generating Station one option to phase out coal by 2030. Finally, CCNB is in broad agreement with the submission by the Pembina Institute.

Key outcomes for the Clean Electricity Standard

1. Send an immediate signal against investing in emitting electricity generation assets.
2. Generate early and deep reductions of greenhouse gases (GHGs), rather than relying on greater reductions closer to 2035.
3. Secure cost effective GHG reductions.
4. Protect and enable energy affordability and access to electricity.

Priority Principles for Canada's Clean Electricity Standard

1. **Regulate a Clean Electricity Standard by using declining emissions intensity caps.**
   We recommend that the Clean Electricity Standard (CES) regulations under the Canadian Environmental Protection Act (CEPA) set emissions intensity caps to ***0 g CO2e/kWh by 2035***, with regularly tightening interim caps. The tightening rate must align with the pace needed to achieve the 2035 target but also the existing commitment to a 90 per cent emissions-free electricity system by 2030. We believe that the CES should be designed to send an immediate, clear signal that avoids new emitting generation wherever possible. As an emissions-intensity standard, the CES is inherently technology neutral but implementation of the CES should drive investments in non-emitting, cost-effective, already commercially available and reliable renewable electricity. The CES should eliminate all unabated electricity supply from fossil fuels by 2035.

2. **Expose electricity emissions to the full carbon price**.
   Declining sector emissions intensity caps should underpin the CES. We also recommend that the federal government remove the electricity sector from the Output-Based Pricing System (OBPS) and expose the sector to the full carbon price, in line with the federal benchmark in each compliance year.

3. **Work in partnership with provincial and territorial governments.**
   Provinces and territories have jurisdiction over electricity, and a wide range of approaches exist in Canada to electricity system regulation, system operators and utilities. The federal government could choose to use the CES as a backstop where provinces regulate to the federal CES intensity level or the federal standard applies to that province. This is the case with the *Greenhouse Gas Pollution Pricing Act*. Any equivalency agreement should provide a confident alternative pathway to achieving the same GHG reductions and should involve all key stakeholders in its design.

4. **Prioritize energy affordability and access to electricity.**
   As Canada moves to decarbonize the electricity sector by 2035, we also need to reduce or eliminate energy poverty. As end-uses increasingly switch to the electricity sector, more energy poverty considerations will fall under the umbrella of the electricity sector. A national energy poverty strategy and federal support for regulatory solutions to energy poverty are required. Focused programming to support low-and-moderate income and equity-seeking households should be a priority. Many solutions such as efficiency programming, deep energy retrofits, financial supports and utility rate designs focused on

low-and-moderate income households fall outside of the focus for CES regulations, but are a priority for implementation along with a CES.

5. **Minimize the 'net' in Canada's net-zero electricity system.**
   Although the challenge is considerable, the electricity sector is widely seen as the sector that is best positioned for medium-term decarbonization. We see the opportunity for a zero-emissions electricity system by 2035 without relying unnecessarily on negative emissions technologies such as Direct Air Capture (DACs), bioenergy with carbon capture and storage (BECCS) or fossil fuel-powered generation with carbon capture, utilization and storage (CCUS). We recommend that the role of any offsets or netting is minimized in the development of the CES.

Other considerations

Canada-wide focus groups in March 2022 conducted by CCNB and focused on social acceptance of renewable energy projects found that a strong desire for community influence and community benefits. Over 50 participants from British Columbia and Alberta, Manitoba and Saskatchewan, New Brunswick and Nova Scotia, and the Atlantic indicated they are open to supporting a near zero grid by 2035 if people and communities are treated fairly. The focus group results informed a survey of 1,800 Canadians in early April 2022 that tested the influence of electrification narratives on perceptions of how fair and acceptable a clean electricity standard is to Canadians. The results of the focus group and survey strongly suggest that if the federal government is to use a clean electricity standard to deliver a near zero grid by 2035 significant care is required to ensure low-and-moderate income households and communities, including indigenous communities, are treated fairly meaning that all communities affected by renewable energy and transmission projects need to benefit in some way and to influence how and where projects are built. CCNB will share a final report of the results of our social acceptance research in May 2022.

Based on our research, and the legislative realities of using the *Canadian Environmental Protection Act* to regulate a clean electricity standard (CES), requires that the federal government use its regulatory and spending power to facilitate successful implementation of provincial, utility and private sector projects that are reliable, affordable and critically, fair. Failure to do so will undermine efforts required to at least double the capacity of Canada's electricity system over the next 10 to 15 years. We believe that federal regulatory and spending interventions in support of a net zero grid by 2035 should be guided by the need to minimize rate impacts (e.g., favouring tax-payer funded investment over rate-payer funded investment as recommended by the Canadian Climate Institute), and the need to lower

household energy costs even as rates go up if federal investments fail to offset ratepayer funded investments.

Policy and program alignment to minimize negative effects of the CES implementation requires close collaboration with Natural Resources Canada and other departments with household, community and indigenous facing programs so that implementation of the clean electricity standard regulation is strongly supported by program investments that protect low-and moderate-income households through retrofits and other electricity saving efforts (e.g., appliances, equipment).

CCNB also strongly recommends that ECCC require robust, meaningful and fair participation so that citizens, communities and indigenous rights' holders have meaningful influence over where projects are located, and how they are structured and implemented. Our research shows people are willing to be flexible but want access and standing in decision-making process and for communities to have a choice. Our focus group participants, consistent with social science research, are looking for personal and social financial benefits (e.g., jobs, economic partnerships, incentives/rebates, tax breaks, community sponsorships), as well as environmental benefits. There are concerns about community impact without gaining a community benefit. Community benefits can include community sponsorships, lower property, sales taxes or power rates, knowing the power generated is power the community relies on. Should true participation be a principle of project implementation, our focus group respondents say they would feel community pride about hosting projects that bring community and environmental benefits.

We also need to consider financial issues creating barriers to progress. Utility debt loads, the risk associated with additional borrowing for some utilities like NB Power, and the potential need to refinance debt may all be important alongside federal and provincial funding of supply side and transmission investments and demand management programs. This could be a deliverable for the Infrastructure Bank.

ECCC can also influence community outcomes through conditions it sets in equivalency agreements. CCNB has strong concerns about the use of equivalency agreements if they lead to weaker environmental outcomes and longer timelines for implementation. Equivalency agreements, if implemented transparently and truly equivalent, can also set conditions requiring reform of provincial electricity and utility board acts, updates to provincial energy policies or to require developing an electrification strategy. Further, with respect to equivalency agreements, CCNB recommends ECCC commit to the principles developed by Climate Action Network Canada.

Ensure equivalency agreements maintain stringency and emissions reductions

CES regulations should not permit use of CEPA equivalency agreements if they undermine net zero grid achievement by 2035. Equivalency agreements should only be used if the following Climate Action Network recommendations are implemented:

i. For climate regulations requiring GHG reductions, amend CEPA 1999 to include a legislative test for equivalency.
ii. Ensure enforcement.
iii. Set floors, not ceilings.
iv. Ensure increasing ambition over time.
v. Ensure flexibility and drive progress.
vi. Include accountability measures.
vii. Ensure fairness in single-sector approaches.
viii. Ensure health and environmental outcomes are considered.

Provincial equivalency agreements for the federal CES could also include:

- Total provincial system compliance instead of individual plant compliance, and
- Multi-province compliance instead of individual province compliance, using intra-and interprovincial credit trading mechanisms for private and public generators.

Other considerations also include the need to minimize the "net" in Canada's net-zero electricity system.

Minimize the 'net' in Canada's net-zero electricity system

Although the challenge is considerable, the electricity sector is well positioned for medium-term decarbonization. Modelling nationally by the David Suzuki Foundation (soon to be released) and regionally by the Rocky Mountain Institute for the Pembina Institute show we can achieve a zero-emissions electricity system by 2035 without relying on negative emissions technologies, fossil fuel-powered generation with carbon capture and storage or new nuclear. New modelling by EnviroEconomics and Navius Research for Ecology Action Centre focused on New Brunswick and Nova Scotia and including Atlantic Loop scenarios also shows the potential for rapid phase-in of renewable energy while maintaining reliability.

Finally, achieving near zero goals affordably and reliability requires financial and institutional reform. The Net Zero Grid Council is one body that can assist with planning for the financial and institutional changes and federal-provincial negotiations. But we also need regional networks and institutions that can coordinate regional electricity supply and integrated resource planning. The Nordic countries provide a model.

Treatment of biomass

There are discussions in New Brunswick about the potential of wood chips to replace coal at the Belledune Generating Station. CCNB is concerned about the ecological and efficiency implications of using wood chips for generating electricity. The national greenhouse gas inventory treatment of harvesting and wood products leads to not counting emissions from burning biomass at the point of combustion. There is skepticism about whether the accounting methods accurately reflect what the atmosphere sees from the lifecycle effects of harvesting and combustion of biomass products. But there are other reasons to doubt the viability of biomass as a solution to meeting the CES.

Electricity generated from biomass is electricity generated inefficiently, compared to burning biomass to fire boilers in district energy systems or in buildings like schools and hospitals. A power plant like Belledune in New Brunswick is about 35 per cent efficient (less if line losses are counted), while a cogeneration district energy system or efficient boiler can achieve efficiencies well in excess of 80 per cent.

Biomass is described as a non-emitting fuel at the point of combustion because these emissions are accounted for previously through the National Forest Carbon Monitoring, Accounting and Reporting System for Harvested Wood Products (NFCMARS-HWP). According to the inventory report, "the model takes the C inputs and, in annual time steps, exports some of the harvested roundwood, converts all harvested wood into commodities (sawnwood and other-industrial roundwood, wood-based panels, pulp and paper, pellets and manufactured logs used for bioenergy, and residuals referred to as "milling residue"), exports some of the commodities produced, and keeps track of the additions to and retirements from HWP in-use and used for bioenergy" (p.135). The model tracks province-specific transfers to these harvested wood product pools.

The 2021 National Inventory Report indicates, however, that the data on wood pellets and manufactured log production was last collected in 2017 (Part 2, p 135) and there are concerns that the inventory approach does not fully account for greenhouse gas emissions associated with forestry activities. The Drax Generating Station in the United Kingdom is a case study of the potential problems with burning wood pellets for electricity. The Drax power station uses four of its six generators to burn wood pellets from the United States and Canada.

Ninety per cent of New Brunswick's current wood pellet production is shipped via the Port of Belledune to the Drax plant. The Drax biomass facility was conceived as a viable carbon-neutral alternative for former coal-fired plants. The Drax station was recently dropped from an

investment index of clean-energy companies over concerns about the emissions and sustainability of wood burning. The Drax also is a financial drain requiring $1 billion in annual government subsidies.

There are three approaches that could be considered to ensure efficient use of biomass and to adequately account for emissions at the point of combustion. The first approach, and most important to electricity, is to apply an efficiency rate to the use of biomass for electricity, and this standard should determine whether biomass is permitted for credit trading. This is in line with Massachusetts which has proposed to exclude biomass from renewable portfolio credit trading if efficiencies are below 60 per cent. A 2015 report by East Coast Environmental Law (ECEL) also recommended that Maritime Provinces implement minimum efficiency standards for biomass burning to at least 60 per cent conversion. Importantly, the state also proposes to completely exclude biomass from its definition of renewable energy if located in areas identified as environmental justice communities.

ECEL further recommended that Maritime Provinces introduce biomass-harvesting regulations to ensure that "biomass harvesting maintains sufficient standing and fallen deadwood, forest structure, and soil quality so as not to cause significant negative impacts on biodiversity." Current wood pellet production in New Brunswick is 500,000 tonnes/year using industrial waste products. At Belledune, for example, if the plant is used only for winter peaking, New Brunswick would need to double its current annually production of wood pellets and to quadruple it if the plant ran at full capacity (e.g., winter peaking requires 660,000 tonnes/year of wood pellets, at full capacity it would need 1.5 to 2.2 million tonnes/year of wood pellets).

The second approach, important to the question of emissions, would require harvested wood product surveys to occur more regularly, perhaps every three years and to ensure that uncertainty factors are regularly updated. The third approach is to require carbon capture and storage for biomass generated electricity projects to account for inventory uncertainty and to generate negative emissions drawdown. The cost to convert coal plants to biomass is high. The Atikokan, Ontario and the Port Hawkesbury, Nova Scotia conversions cost about $200-million each. For this kind of investment, the clean electricity standard design may drive more sustainable innovation by requiring gasification of biomass, potentially setting the stage for green hydrogen when it is available.

CCNB recommends that biomass available only from sustainable forestry practices in line with climate change resiliency should be utilized. Examples include wood waste products from industrial processing such as wood chips and sawdust. The goal is to avoid incenting demand

for biomass that exceeds byproduct capacity and instead drives increased whole tree harvesting that increase concerns about forest health and biodiversity.

The priority use of biomass from low-grade wood products should be heating, rather than electricity. Consideration of biomass for electricity must also consider competing demands for forest products including liquid biofuels to meet clean fuel standard requirements, as well as wood substitution policies. A precautionary approach is required and whole system modeling that factor in all federal and provincial regulations creating demand for wood-based products. Set a minimum standard for efficient use of biomass favouring heating over electricity generation, approximately 60 per cent. Full life-cycle assessment should be employed to capture environmental impact of biomass-to-electricity.

Respectfully

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