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November 2, 2023

The Honourable Steven Guilbeault
Minister of Environment and Climate Change
House of Commons
Ottawa, Ontario, Canada
K1A 0A6

The Honourable Jonathan Wilkinson
Minister of Energy and Natural Resources
House of Commons
Ottawa, Ontario, Canada
K1A 0A6

The Honourable Mark Holland
Minister of Health
House of Commons
Ottawa, Ontario, Canada
K1A 0A6

Subject: City of Toronto comments on draft Clean Electricity Regulations

Dear Ministers Guilbeault, Wilkinson, and Holland,

I am pleased to provide comments on the draft Clean Electricity Regulations (CER), released on August 10, 2023.

Achieving Toronto's goal of net-zero greenhouse gas (GHG) emissions community-wide by 2040, as outlined in the TransformTO Net Zero Strategy, among North America's most ambitious climate plans, requires transitioning buildings and transportation from fossil fuels to clean electricity. A critical step for success is developing a resilient, carbon-free, affordable electricity supply in Ontario and increasing local renewable electricity generation.

The CER are essential for Toronto to meet its 2040 net-zero target, as they will reduce allowable GHG emissions from Ontario's remaining fossil-fueled electricity generating stations, and encourage the development of non-emitting energy sources.

Toronto City Council, in May 2023, urged the Government of Canada to, "enact and enforce strong and robust Clean Electricity Regulations consistent with a net-zero electricity grid and that enable broad decarbonization of all other sectors (2023.IE3.3, Part 6a). In May 2023, City Council also stated its decision to, "oppose any new power generation proposal involving increased burning of fossil fuels, including natural gas, in the City" (2023.MM6.13, Part 1). Toronto is the heart of the Greater Toronto and Hamilton Area, a region that represents 20 per cent of Canadians. We request the federal government continue to work with the Government of Ontario and its agencies to move Ontario's electricity supply toward net-zero emissions so that climate goals in Toronto and across the region can be met.

In their current draft, the CER include several provisions that would allow emissions from fossil-fueled electricity generation to continue, well past 2035, outside of the CER's emission performance standard of 30 tonnes CO_2/GWh, and therefore, refinements to the draft regulations are recommended in order to achieve the federal government's objective of a net-zero electricity sector by 2035.[i]

I offer the following specific comments on the draft regulations:

1. Emission performance standard

The CER Regulatory Impact Analysis Statement (RIAS) indicates that, "Canada's emitting electricity-generating sector is not on a path to achieve significant emissions transformation by 2035", and the draft CER are viewed as a positive first step addressing a specific need for regulation and leadership in this area. The emissions performance standard proposed in the draft regulations, of 30 tonnes CO_2/GWh, is significantly lower than current emissions from Ontario's remaining fossil-fueled electricity generating stations. According to Ontario Power Generation assumptions[ii], the emission intensity of natural gas power plants is 420 tonnes eCO_2/GWh, well over ten times greater than the CER's proposed emission performance standard for fossil-fueled generating stations.[iii] These assumptions demonstrate that a significant course correction is needed to achieve the federal government's objective of a net-zero electricity sector by 2035.[iv]

2. Planning for future electricity generation in Toronto

As noted above, in May 2023, Toronto City Council expressed its opposition to "any new power generation proposal involving increased burning of fossil fuels, including natural gas, in the City" (2023.MM6.13, Part 1). Consistent with that decision, in June 2023, Toronto City Council requested, "the Government of Canada to issue Clean Electricity Regulations that prohibit increasing the gas-fired generating capacity at the Portlands Energy Centre, effective immediately" (2023.MM7.25, Part 1). We request that the federal government amend the CER where possible to further discourage new fossil-fueled electricity generation, consistent with these positions of Toronto City Council.

Currently the electricity grid in Ontario has a high reliance on electricity generation from natural gas. Investing in renewable electricity generation and storage today will put us on the path towards an electricity system that continues to be reliable, and is more diverse and resilient. We request the federal government to encourage the Government of Ontario and

its agencies to increase renewable generation and storage, in order to provide non-emitting, reliable electricity generation for the future, and to achieve the federal government's 2035 objective of a net-zero electricity sector.

3. End of prescribed life

The draft CER would allow electricity generating units commissioned on or before December 31, 2024 to operate outside of the emission performance standard for 20 years, until their end of prescribed life (EoPL), or until 2035, whichever is later. This would mean that fossil-fueled electricity generating facilities could emit above the new emission standard until as late as December 2044. This timeline is not consistent with the Government of Canada's objective of a net-zero electricity sector by 2035. Nor is it consistent with the urgent need to move Ontario's electricity generating sector to net-zero emissions to enable the City of Toronto to meet its 2040 net-zero target.

We recommend further assessment of the impacts of allowing fossil-fueled electricity generators to operate outside of the emission performance standard for 20 years, given the dependence on a net-zero electricity sector for the City of Toronto and other jurisdictions to meet their climate goals. Further, we recommend against lengthening the EoPL, given that the CER RIAS indicates that lengthening the period beyond 20 years would not only lower emission reductions, it would also increase costs.

4. Exceptions to emission performance standard

A. Generating units that operate 450 hours or less per year

The draft CER would allow generating units that operate 450 hours or less per year to emit 150 kilotonnes of CO_2 per year and operate outside of the emission performance standard indefinitely.

Fully understanding if and how this provision would apply to individual generating stations, and resultant emissions, would require clarity on how the CER define "units". For instance, we seek clarification whether the Portlands Energy Centre (PEC) in Toronto would be considered one "unit" under the CER, or each of its turbines would be considered a "unit", as this would change the resultant emissions.

Given the urgency to achieve a net-zero electricity system, we urge caution before allowing fossil-fueled electricity generation to operate outside of the emission performance standard indefinitely.

B. Generating units with a carbon capture and storage system

Under the draft CER, generating units with a carbon capture and storage (CCS) system, may meet a less stringent emission intensity limit of 40 t CO_2/GWh of electricity generated, for the first seven years CCS is in place. This exception sunsets at the end of 2039.

Employing CCS to enable continued fossil-fueled electricity generation, and allowing more lenient emission limits for fossil-fueled generating units that have CCS technology, are of concern. As noted in the CER RIAS, emitting types of electricity generation, such as natural gas fueled electricity generation with CCS, is associated with air pollutant emissions. The CER RIAS further indicates that natural gas fueled electricity generation with CCS would provide less benefit, in terms of air pollutant emission reductions, compared to non-emitting types of electricity generation. While CCS enables a fossil-fueled electricity generator to capture GHG emissions, CCS also imposes an “energy penalty” which is an increase in the amount of fuel burned per unit of electricity produced, and a corresponding increase in air pollutant emissions, relative to unabated fossil fuel electricity generators.[v]

Promoting and supporting non-emitting renewable electricity generation and energy efficiency is recommended as a priority over electricity generation with GHG emissions managed using CCS. If CCS is to be used as a CER compliance mechanism on the path to a net-zero electricity sector, it should be demonstrated that the storage meets the stringent criteria of the City of Toronto’s Offset Credits Policy, which stipulates storage must have a low risk of reversal or negative social and environmental consequences.[vi]

5. Complementary policies

The CER are a necessary and positive step forward, and the regulations can be enhanced by complementary policies.

The CER will significantly reduce emissions from fossil-fueled electricity generation, however residual annual emissions will remain. This raises the question of how residual emissions will be addressed so that our shared goal of a net-zero electricity sector can be realized. Provisions to address residual emissions could be included in the CER, or the federal and provincial governments could introduce additional programs and regulations to address these emissions. It would be beneficial to have clarity early on how these residual emissions will be addressed.

To send clear price signals that encourage energy efficiency and the development of renewable, non-emitting sources of energy, we encourage the federal government to assess applying the full carbon price to electricity generators. The CER RIAS indicates, “As of 2030, electricity generation capacity from gaseous fuel that meets specified criteria and that was put in place on or after January 1, 2021, whether at an existing or new facility, would be fully exposed to the carbon price. Any such electricity generation capacity that existed prior to 2021 would be subject to the carbon price only for the portion of GHG emissions above the OBS of 370 t /GWh." The introduction of the CER is an opportunity to examine the potential impacts of applying the full price of carbon to electricity generation, such as the impacts on emissions, development of renewable energy, affordability, jobs and electricity system reliability.

I would be pleased to discuss these comments further with your officials. We look forward to continuing to collaborate with the federal and provincial governments and agencies to modernize our electricity system and support success in meeting net-zero emission targets.

James Nowlan
Executive Director, Environment & Climate Division
City of Toronto

Cc:

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[i] The federal paper, Powering Canada Forward, released August 2023, indicates:
Federal policy for Canada's electricity sector is built around three clean electricity and climate-related objectives:
- transitioning off unabated coal-fired generation by 2030;
- achieving a net-zero electricity sector by 2035; and
- achieving net-zero emissions in Canada by 2050.

(https://natural-resources.canada.ca/our-natural-resources/energy-sources-distribution/electricity-infrastructure/powering-canada-forward-building-clean-affordable-and-reliable-electricity-system-for/25259)

[ii] 2022 Ontario Power Generation ESG Report, page 18.
(https://www.opg.com/reporting/esg-report/)

[iii] Please note that the proposed federal emission performance standard is expressed in terms of CO_2 (carbon dioxide). The Ontario Power Generation assumption to which it is compared is expressed in terms of eCO_2 (carbon dioxide equivalents). Carbon dioxide equivalents are the sum of the greenhouse gases carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). The quantity of CO_2 and eCO_2 emitted when natural gas is burned are similar. According to the Government of Canada's Official Greenhouse Gas Inventory, the emission factors for natural gas are 1,921 g CO_2/m^3 and 1,932 g eCO_2/m^3.
(https://data-donnees.ec.gc.ca/data/substances/monitor/canada-s-official-greenhouse-gas-inventory/D-Emission-Factors/?lang=en)

[iv] The federal paper, Powering Canada Forward, released August 2023, indicates:
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- transitioning off unabated coal-fired generation by 2030;
- achieving a net-zero electricity sector by 2035; and

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(https://natural-resources.canada.ca/our-natural-resources/energy-sources-distribution/electricity-infrastructure/powering-canada-forward-building-clean-affordable-and-reliable-electricity-system-for/25259)

[v] CER RIAS, footnote 29, states:
"Plant types with CCS are able to abate the vast majority of their GHG emissions by capturing and storing those emissions (typically underground) instead of releasing them into the atmosphere. However, these CCS technologies come with trade-offs to fuel usage and associated air pollution. Specifically, plant types with CCS use more fuel to generate 1 MWh of electricity than their unabated counterparts, in order to power the systems that sequester the GHG emissions. Since more fuel is being burned, a proportionate increase in air pollutants is released into the atmosphere (because CCS technologies only capture and store GHGs, not air pollutants). This phenomenon is sometimes referred to as the "energy penalty."
(https://www.gazette.gc.ca/rp-pr/p1/2023/2023-08-19/html/reg1-eng.html)

[vi] City of Toronto Offset Credits Policy was adopted by City Council in May 2023 as Attachment B to report 2023.IE3.4, Carbon Accountability: Institutionalizing Governance, a Carbon Budget and an Offset Credits Policy.
(https://www.toronto.ca/legdocs/mmis/2023/ie/bgrd/backgroundfile-235867.pdf)