

Comments on federal draft Clean Electricity Regulations

Date: October 11, 2023

To: Infrastructure and Environment Committee

From: Executive Director, Environment and Climate Division

Wards: All

SUMMARY

The Clean Electricity Regulations (CER) draft, released by Environment and Climate Change Canada (ECCC) on August 10, 2023, plays a pivotal role in enabling Toronto to achieve its TransformTO Net Zero Strategy target of reaching net-zero greenhouse gas (GHG) emissions throughout the community by 2040.

Achieving Toronto's goal of a healthy, prosperous, equitable, resilient and net-zero carbon city by 2040, requires transitioning buildings and transportation from fossil fuels to clean electricity. A critical step for success is the presence of 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.

While the CER is a positive first step, there is a need for further refinements to enhance their clarity and effectiveness and strengthen their intent and application. Additionally, fostering collaboration among all levels of government is essential to assist Toronto and other communities in Ontario in achieving their climate goals. A letter of comment, attached to this report, is scheduled for submission by the November 2, 2023 deadline to the Government of Canada.

RECOMMENDATIONS

The Executive Director, Environment and Climate Division recommends that:

1. The Infrastructure and Environment Committee receive this report for information.

FINANCIAL IMPACT

There are no immediate financial implications resulting from this report.

The Chief Financial Officer and Treasurer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

On June 14 and 15, 2023, City Council adopted the member motion, Requesting Federal Government Support for the City's Climate Goals, including in its decision that, "City Council request the Government of Canada to issue Clean Electricity Regulations that prohibit increasing the gas-fired generating capacity at the Portlands Energy Centre, effective immediately.

(<https://secure.toronto.ca/council/agenda-item.do?item=2023.MM7.25>)

On May 10, 11 and 12, 2023, City Council adopted the member motion, A Clean Energy Future for Toronto, and included in its decision:

1. City Council oppose any new power generation proposal involving increased burning of fossil fuels, including natural gas, in the City.
2. City Council request the Province of Ontario to immediately invest in programs to deliver energy efficiency, demand management and conservation to meet the capacity and energy needs that would have been fulfilled by expansion of electricity production through burning of fossil fuels.
3. City Council forward this Item to the Independent Electricity Operator for information.

(<https://secure.toronto.ca/council/agenda-item.do?item=2023.MM6.13>)

On May 10, 11 and 12, 2023, City Council adopted the report, TransformTO 2022 Annual Report: Laying the Foundation for Net Zero", and included in its decision:

6. City Council urge the Government of Canada to: a. 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.
7. City Council direct City of Toronto staff to engage their Federal counterparts on the development of the Clean Electricity Regulations and Zero-Emission Vehicle sales mandate, and to advocate for regulations that will support and enhance our ability to achieve TransformTO goals for climate and health.

(<https://secure.toronto.ca/council/agenda-item.do?item=2023.IE3.3>)

On December 15, 16 and 17, 2021, City Council adopted the report, TransformTO - Critical Steps for Net Zero by 2040, which laid out the City's Net Zero Strategy and accelerated the City's community-wide net-zero greenhouse gas target to 2040.

Decision Part 16 stated, "City Council request the Government of Canada and Federal agencies and corporations to: a. create and enforce a national clean electricity standard to ensure decarbonization of the electricity grid as soon as possible".

(<https://secure.toronto.ca/council/agenda-item.do?item=2021.IE26.16>)

COMMENTS

1.0 Introduction to the draft Clean Electricity Regulations

Overview

The [draft Clean Electricity Regulations](#) (CER) are part of Canada's 2030 Emissions Reduction Plan to help reach an emissions reduction target of 40-45 per cent below 2005 levels by 2030 and net-zero emissions by 2050. The draft CER, [released on August 10, 2023](#) by Environment and Climate Change Canada, will help Toronto meet its TransformTO 2040 target of net-zero greenhouse gas (GHG) emissions.

The draft CER propose to set a GHG emission intensity performance standard for electricity generation units (power plants) with a capacity of 25 MW or greater. The emission standard would apply to new units built by 2025 and later as of 2035, and apply to existing units after their 20-year life or in 2035, whichever is later. The proposed 30 tonnes CO₂/GWh emission standard could significantly reduce emissions from fossil-fueled generation units in Ontario.

If adopted, the regulations will move Ontario's electricity generation system toward lower emissions. However, 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

Comments on the draft CER may be made until November 2, 2023. A letter of comment that City staff intends to submit to the Government of Canada by that time is included with this report (see Attachment 1: Proposed letter to the Government of Canada: City of Toronto comments on draft Clean Electricity Regulations).

Summary of draft regulations

The draft CER set intensity-based emission performance standards for electricity generation units across Canada, with some exceptions. The CER are based on three core principles:

- Maximize GHG reductions to achieve net-zero emissions from the electricity grid by 2035;
- Maintain electricity affordability for Canadians and businesses;
- Maintain grid reliability to support a strong economy and meet Canada's growing energy needs.

The regulations apply to electricity generation "units" in Canada that use any amount of fossil fuel to generate electricity, have a capacity of 25 MW or greater, and are connected to an electricity system that is subject to NERC (North American Electric Reliability Corporation) standards.

The proposed annual average emission performance standards for electricity generation units are:

- Units, other than those combusting coalⁱⁱ, commissioned before January 1, 2025: Starting the latter of January 1, 2035 or 20 years after its commissioning, the proposed performance standard (30 tonnes of CO₂ emissions/GWh of electricity generated) would apply;
- Units commissioned on or after January 1, 2025: Starting on January 1, 2035, the proposed performance standard would apply.

Exceptions to the emission performance standards:

- Generating units that operate for 450 hours or less per year may emit up to 150 kt CO₂ per calendar year. This could apply to peaking plants that operate occasionally when needed to satisfy peak electricity demand;
- A somewhat more lenient performance standard of 40 t/GWh applies to units with a carbon capture and storage (CCS) system that is less than seven years old. The exception sunsets December 31, 2039;
- Emergency circumstances - a provision that allows emitting electricity generation in order to avoid a threat to the electricity supply or to restore it.

The proposed emission performance standard applies to net exporters of energy. The regulations are technology agnostic, allowing the provinces to choose how to comply. The regulations set out quantification methods and reporting requirements.

2.0 Significance for Toronto

Achieving Toronto's goal of net-zero GHG emissions by 2040, as outlined in the TransformTO Net Zero Strategy, requires transitioning buildings and transportation from fossil fuels to clean electricity. A critical step for success is the presence of a resilient, carbon-free, affordable electricity supply in Ontario and increasing local renewable electricity generation.

City Council has consistently stated its support for lower emission electricity generation in Toronto and the proposed Clean Electricity Regulations that will lead to a net-zero electricity system. For instance, 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).

The CER are an essential step to lowering emissions from Ontario's electricity supply. The emission standard proposed in the draft regulations is 30 tonnes CO₂/GWh, which is significantly lower than current emissions from Ontario's fossil-fueled electricity generating stations. According to Ontario Power Generation assumptionsⁱⁱⁱ, the emission

intensity of natural gas power plants is 420 tonnes eCO₂/GWh, well over ten times greater than the proposed emission standard for fossil-fueled generating stations.^{iv}

Meeting the federal government's 2035 objective of a net-zero electricity sector, while reducing reliance on fossil fuels and maintaining reliability, will require policies such as the CER and will also require investment in non-emitting, non-fossil electricity generation. 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.

The draft regulations are a significant, positive step forward and would support Toronto meeting its net-zero goal by lowering the allowable GHG emissions from Ontario's remaining fossil-fueled electricity generating stations. Refinements to the draft regulations are recommended in order to achieve the federal government's objective of a net-zero electricity sector by 2035.^v The draft 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 CO₂/GWh.

3.0 Conclusion

Adequate supply of affordable, net-zero electricity is critical to the success of Toronto meeting its 2040 net-zero GHG emissions goal, and the Clean Electricity Regulations will be an important step forward.

A letter of comment that City staff intend to submit to the Government of Canada by November 2, 2023 is included with this report (Attachment 1).

CONTACT

Cecilia Fernandez, Manager, Policy & Research, Environment and Climate Division,
416-338-5469, Cecilia.Fernandez@toronto.ca

SIGNATURE

James Nowlan
Executive Director, Environment and Climate

ATTACHMENTS

Attachment 1. Proposed letter to the Government of Canada: City of Toronto comments on draft Clean Electricity Regulations

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 The draft regulations include provisions for units that use coal. Since Ontario has no coal-fired electricity generating stations, coal is excluded from this discussion.

ⁱⁱⁱ 2022 Ontario Power Generation ESG Report, page 18.

(<https://www.opg.com/reporting/esg-report/>)

^{iv} Please note that the proposed federal emission performance standard is expressed in terms of CO₂ (carbon dioxide). The Ontario Power Generation assumption to which it is compared is expressed in terms of eCO₂ (carbon dioxide equivalents). Carbon dioxide equivalents are the sum of the greenhouse gases carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O). The quantity of CO₂ and eCO₂ 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 CO₂/m³ and 1,932 g eCO₂/m³.

(<https://data-donnees.ec.gc.ca/data/substances/monitor/canada-s-official-greenhouse-gas-inventory/D-Emission-Factors/?lang=en>)

^v 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>)