



The Revised Draft

Federal Clean Electricity Regulations and Ontario Gas Power

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Overview

On Feb. 16, 2024, Environment and Climate Change Canada released its revised draft Clean Electricity Regulations (CERs) to regulate the greenhouse gas (GHG) pollution of electric power plants effective Jan. 1, 2035.¹

Key features of the revised draft CERs are as follows:

- 1 They will not limit the GHG pollution of existing gas-fired power plants before 2035.
- 2 In 2035, they will permit the GHG pollution of Ontario's gas plants to be at least three times greater than their pollution in 2017.
- 3 Gas-fired power plants will not be subject to any pollution limits until they are at least 20 years old.
- 4 The GHG pollution of gas-fired power plants that operate during emergencies will not be subject to any emission limits (e.g., will not be required to offset their higher pollution during emergencies with lower pollution at a later date).

Fortunately, Ontario can phase-out its need for gas power by 2035 and lower its electricity bills by tripling its wind and solar power.

We recommend that the final CERs should not permit Ontario's electric power plants' GHG pollution in 2035 to exceed their 2017 level.



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Proposed 2035 emission limits for Ontario power plants that are more than 20-years old

The revised draft CERs will permit the GHG pollution of power plants that are more than 20-years old in 2035 to be at least equal to their maximum annual potential power production in gigawatt-hours (GWh) multiplied by 30 tonnes per GWh.

Specifically, this proposal would permit Ontario’s power plants that are more than 20 years old to emit at least 2.49 megatonnes (MT) in 2035.²

Furthermore, the federal government is considering raising its proposed 2.49 MT emission limit by:

- a) revising its performance standard (30 tonnes per GWh) to allow greater emissions; and
- b) allowing offsets for excess emissions.



This proposal would permit Ontario’s power plants that are more than 20 years old to emit at least **2.49 megatonnes** in 2035

Potential emissions of Ontario power plants that are less than 20-years old

The draft CERs propose to exempt power plants that are less than 20 years old from any emission limits (20 Year Loophole) if they came into service on or before Dec. 31, 2024 or if they had substantial investment and work underway before Jan. 1, 2025.

Table 1 shows the potential GHG pollution in 2035 of six Ontario gas plants under the 20 Year Loophole.

Table 1 | Potential Annual GHG Pollution in 2035 of Six Ontario Gas Plants Under 20 Year Loophole³

Owner	Power Plant	In-Service Date	GHG Pollution
Ontario Power Generation	Napanee (900 MW)	2020	2.90 MT
Greenfield South	Green Electron (314 MW)	2017	1.01 MT
Invista	Maitland (45.7 MW)	2015	0.15
Northland Power	Kirkland Lake (29.9 MW)	2015	0.10
Capital Power	Windsor (106 MW)	2025 ⁴	0.46 MT
Eastern Power	St. Clair Township (212.5 MW)	2026-27 ⁵	0.92 MT
Total			5.54 MT

N.B. The 20 Year Loophole for the Maitland and Kirkland Lake power plants, which came into service in 2015, will expire on Dec. 31, 2035.

Total potential emissions of Ontario's power plants in 2035

As noted above, the revised draft CERs will permit the GHG pollution of Ontario's power plants in 2035 to be at least 8.03 (2.49 + 5.54) MT.

That is, they will permit Ontario's power plants' GHG pollution in 2035 to be at least three times greater than their actual pollution in 2017 (2.6 MT).⁶

Tripling wind and solar by 2035

At the COP 28 climate summit in Dubai 198 governments (including Canada's) called for the world to triple its renewable energy capacity by 2030.⁷

The Government of Ontario is proposing to procure 5,000 MW of new renewables by 2034⁸, which will increase Ontario's renewable capacity (water, wind, solar, bioenergy) by 30%, one-tenth of the COP target increase.⁹

By tripling its wind and solar capacity by 2035, Ontario can phase-out its need for gas power and create a zero-carbon electricity grid.¹⁰

Tripling wind and solar power could also lower Ontario's electricity costs by reducing the need for new high-cost gas-fired peaker plants and nuclear reactors.¹¹



By tripling its wind and solar capacity by 2035, Ontario can phase-out its need for gas power and create a zero-carbon electricity grid

Recommendations

According to the Intergovernmental Panel on Climate Change, the world needs to reduce its GHG pollution by almost half by 2030 to limit temperature rise to 1.5 degrees Celsius.¹² According to the Secretary-General of the UN, wealthy countries such as Canada should be moving the fastest on decarbonization and should have zero carbon electricity systems by 2035 at the latest.¹³

Thirty-five (35) municipalities, which represent almost 60% of Ontario's population, have passed resolutions calling for Ontario to phase-out gas power by 2030 or ASAP.¹⁴

Ideally, Canada's CERs should require Ontario to achieve a zero-carbon electricity grid by 2035. At a minimum, the CERs should not permit the GHG of Ontario's power plants in 2035 to exceed their 2017 level (2.6 MT) in the absence of emergencies (e.g., power supply outages caused by unexpected circumstances).



Ideally, Canada's CERs should require Ontario to achieve a zero-carbon electricity grid by 2035

Sources

- 1 Environment and Climate Change Canada, *Clean Electricity Regulations – Public Update*, (February 16, 2024).
- 2 In December 2023 Ontario had 10,470 MW of gas-fired generation capacity. Furthermore, the IESO has contracted for 286.4 MW of capacity upgrades to seven of Ontario's existing gas plants. However, the currently existing power plants that will be less than 20 years old in 2035 [Napanee (900 MW), Green Electron (314 MW), Kirkland Lake (29.9 MW) and Maitland (45.7 MW)] will not be subject to emission limits in 2035. Therefore, the total emission limits for Ontario's gas plants in 2035 will be equal to 9.467 GW x 8760 hours x 30 t/GWh. That is, 2.49 MT. IESO, *Reliability Outlook*, (December 2023), page 13; and IESO, *Same Technology Upgrades Solicitation – Executed Agreements*, (September 18, 2023).
- 3 The potential annual gas-fired electricity generation was estimated assuming that the gas plants would have 95% capacity utilization rates. For the gas plants that are already in-service we have used the IESO's estimate of the average GHG emission rate of Ontario's gas plants in 2035, 387 tonnes per GWh, to estimate their potential total GHG pollution. For the two new gas-fired peaker plants that are not yet in-service, we have assumed that their GHG emission rates will be 520 tonnes per GWh, based on Northland Power's forecast GHG emission rate for the 198 MW gas-fired peaker plant that it was proposing to build in Thorold. See IESO, *2022 Annual Planning Outlook*, Data Tables, Figure 44, Case 2 and Figure 48; and email to Jack Gibbons from Thorold Peaking Project, Northland Power, (August 29, 2023).
- 4 https://www.capitalpower.com/media/media_releases/capital-power-announces-two-successful-bids-in-ontario-iesos-expedited-long-term-rfp/#:~:text=The%20York%20Battery%20Energy%20Storage,submissions%20are%20targeted%20for%202025.
- 5 <https://www.theobserver.ca/news/local-news/new-st-clair-township-natural-gas-fired-electricity-plant-will-be-hydrogen-ready>
- 6 IESO, *2022 Annual Planning Outlook*, Data Tables, Figure 48.
- 7 <https://www.iea.org/reports/renewables-2023/executive-summary>
- 8 *IESO Resource Adequacy and Long-Term 2 RFP Engagement*, (December 13, 2023), page 20; <https://www.ieso.ca/Sector-Participants/Engagement-Initiatives/Engagements/Long-Term-RFP>
- 9 Ontario has 17,485 MW of renewable electricity capacity consisting of 8,922 MW of waterpower; 5,333 MW of wind; 2,649 MW of solar and 381 MW of bioenergy. IESO, *Reliability Outlook*, (December 2023), page 13; and IESO, *A Progress Report on Contracted Electricity Supply*, (January 2024), page 9.
- 10 In December 2023 the IESO had 8,182 MW of wind and solar power under contract. According to Clean Energy Canada, the annual capacity factors of new Ontario solar and wind power plants would be 40% and 20% respectively. Therefore, increasing wind capacity by 8,182 MW would increase electricity generation by 28.6 TWh per year; and increasing solar capacity by 8,182 MW would increase electricity generation by 14.3 TWh per year for a total of 42.9 TWh (28.6 + 14.3). According to the IESO's *2022 Annual Planning Outlook*, Ontario's gas-fired generation in 2035 will be 38.8 TWh. IESO, *A Progress Report on Contracted Electricity Supply*, (January 2024), page 9; Clean Energy Canada, *A Renewables Powerhouse*, (February 2023), page 10; IESO, *2022 Annual Planning Outlook*, Data Tables, Figure 44, Case 2.
- 11 <https://www.cleanairalliance.org/a-picture-is-worth-billions/>
- 12 <http://news.un.org/en/story/2023//03/1134777>
- 13 <http://news.un.org/en/story/2023//03/1134777>
- 14 <https://www.cleanairalliance.org/ontario-municipalities-that-have-endorsed-gas-power-phase-out/>

