



Conservation Council *of* New Brunswick  
Conseil de conservation *du* Nouveau-Brunswick

# Submission to the Canada Gazette, Part I, Volume 157, Number 33: Clean Electricity Regulations

The Clean Electricity Regulations (CER) serve as a foundational component within a comprehensive policy framework, crucial for realizing the Government of Canada's ambitious objective of achieving a net-zero electricity grid by 2035. These regulations are part of a larger ecosystem of existing policies, including carbon pricing and federal funding through investment tax credits (ITCs), as outlined in Budget 2023. Furthermore, additional measures are essential to address any residual emissions, particularly through a policy ensuring the offsetting of such emissions with negative emissions.

It is worth noting that the stated objectives of the CER in the draft regulations may not fully align with Canada's broader electricity strategy, as articulated in NRCan's Powering Canada Forward. The draft CER aims for a net-zero grid by 2035 and plays a pivotal role in achieving this goal. The CER, in conjunction with robust carbon pricing mechanisms, offers a pathway to provide regulatory certainty in support of a 2035 net-zero grid. To this end, the CER, combined with carbon pricing, must achieve significant emission reductions in the electricity sector by 2035, incentivize early action to reduce emissions and mitigate investor risk, and find strategies to negate any residual emissions on the grid by 2035.

The Conservation Council of New Brunswick would like to express its appreciation for the Department of Environment and Climate Change Canada's commitment to

developing and implementing the Clean Electricity Regulations and for its dedication to achieving a net-zero grid by 2035. The release of the draft Clean Electricity Regulations in the Canada Gazette 1 (CG1) on August 19th, 2023, provides substantial guidance for establishing a clean, reliable, and affordable grid throughout Canada by 2035. This is a critical milestone as we strive to reach our economy-wide net-zero target by 2050.

The reduction of greenhouse gas emissions in the building, transportation, and industrial sectors heavily depends on the availability of a clean grid. As these sectors decarbonize and electrify, the electricity sector must make substantial emissions cuts to maximize overall emissions reductions. Additionally, it is imperative for Canada to fulfill its international decarbonization commitments, aligning with the goals of the Paris Agreement. A net-zero grid by 2035 is a shared commitment among G7 members and a pivotal step towards long-term decarbonization goals.

Canada holds a unique advantage with 84% of its current electricity grid being carbon-free. Yet, achieving full decarbonization of the grid by 2035 and maintaining its decarbonized state are essential to leverage Canada's position in grid electrification, facilitate rapid decarbonization in other sectors, and contribute significantly to the overarching goal of a net-zero economy by 2050.

The Conservation Council of New Brunswick acknowledges the suite of complementary funding and policy measures outlined in the Powering Canada Forward report, released on August 8th, 2023, in anticipation of the Clean Electricity Regulations CG1 release. These measures, in conjunction with allocations in Budget 2023, are instrumental in transitioning our grid towards a net-zero state by 2035. However, it is vital to emphasize that the Clean Electricity Regulations stand as the primary policy tool to attain net-zero emissions from the electricity sector in Canada by 2035, and thus, these regulations should be crafted to effectively achieve this goal.

While the draft regulations exhibit many favorable aspects, offering robust support for the necessary decarbonization efforts, there are areas where regulatory modifications could enhance energy reliability and resiliency. We also advocate for greater stringency in the regulations to minimize emissions that may persist on the grid in 2035 and to accelerate grid decarbonization, preventing further emissions from the electricity sector.

We are aware that the Department of Environment and Climate Change Canada will receive feedback from a diverse array of stakeholders during this consultative process, each representing different interests and raising unique concerns. Ensuring affordability and reliability of our electricity system, both now and in the future, is paramount in shaping the final version of the regulations. To prioritize these outcomes and to remain steadfast in our commitments to long-term emissions reductions and climate action, we

strongly urge the Department to consider incorporating the recommendations provided below.

We appreciate your dedication to achieving a net-zero grid by 2035 and are committed to working collaboratively to ensure the success of this crucial initiative. Thank you for considering our feedback and for your ongoing efforts to shape a cleaner and more sustainable future for Canada.

## Regulation timing:

The clean electricity regulations are set to take effect by January 1, 2025, requiring extensive regulatory and investment preparations from Canadian electricity stakeholders, including generators, utilities, system operators, and regulatory commissions. Timely implementation of these crucial policies is of the essence, and any unnecessary delays in finalizing the regulations will only create unnecessary complexities and uncertainties.

**Recommendation:** The final clean electricity regulations should be officially published in the Canada Gazette Part II within six months of the conclusion of the current consultation period.

## Maintain a strong emissions standard

The use of an emission performance standard to regulate electricity generating units starting in 2035 is commendable. This standard sets a clear and measurable limit on the amount of CO<sub>2</sub> emissions a generating unit can release in a given year. The proposed emissions performance standard of 30 tCO<sub>2</sub>e/GWh is robust, and it is recommended to maintain this standard in the final regulations. This standard serves to discourage all emitting generation and reduce the reliance on offsets and compliance requirements, aligning with the goal of achieving a net-zero emissions electricity system by 2035.

**Recommendation:** The performance standard should be held at 30 tCO<sub>2</sub>e/GWh. Higher standards are more effective than low standards.

## Introduce interim measures before 2035

The Clean Electricity Regulations (CER) allow units implementing Carbon Capture and Storage (CCUS) technology to transition to the 30 t/GWh standard by providing them with a limited adjustment period. This flexibility is instrumental in allowing these units to fine-tune their CCS systems and adapt their operations to their specific needs. Moreover, units that may face challenges in meeting the stringent 30 t/GWh standard

during their initial seven years of operation are granted the option to operate under the more lenient 40 t/GWh standard. This provision serves the purpose of aiding system operators in delivering reliable electricity by accommodating units during their early stages.

The primary objective of the CER's performance standard is to act as a robust deterrent against new investments in unabated gas-fired generation facilities. Although it may not singlehandedly pave the path to a net-zero grid by 2035, the standard's design is inherently geared toward aligning with and supporting this goal. Crucially, it plays a pivotal role in the broader CER framework by aiming to minimize residual emissions on the grid as of 2035. Initially, the flexibility offered for carbon capture is intended to address operational challenges that could hinder consistent compliance with the standard during the initial years.

Furthermore, the adoption of an early standard that gradually tightens over time brings various benefits, such as incentivizing proactive measures, mitigating the risk of regulatory non-compliance, preventing sudden surges in construction, and reducing cumulative emissions. To address potential supply chain, labor, and deployment concerns upon the standard's 2035 implementation, an alternative approach is suggested. To encourage early action and foster sector support for a stable regulatory framework, a less stringent standard could be introduced in advance of 2035, remaining in effect throughout a plant's operational lifespan. This mechanism accommodates ongoing advancements in carbon capture technologies without compromising the signal for unabated gas investments. Increasing the existing flexibility for CCUS performance to a 50 t/GWh performance standard. However, beyond 2030, the standard should become more stringent, with an assumed capture rate of 90-95%.

Carbon Capture and Utilization Storage (CCUS) technology currently faces the challenge of being overpromised yet underperforming. Meeting CER standards would necessitate natural gas-fired power plants to achieve a nearly 95% CO<sub>2</sub> capture rate using CCUS, a benchmark that no existing facility worldwide has come close to reaching. Should fossil fuel plants continue operating out of compliance post-2035 due to CCUS's inability to meet expectations, the efficacy of regulatory standards would be compromised. Weakening standards or extending deadlines may aid industry compliance in the long run but fails to align with the urgent demands of climate action.

Although CCUS technology has yet to meet the desired standards, it is vital to encourage its integration into all fossil-fuel units intending to operate. The interim standards offer the Department an opportunity to devise strategies that reward industries genuinely implementing CCUS while holding units falling behind accountable. Striking this balance between incentives and penalties not only promotes innovation in

CCUS but also expedites the transition to cleaner energy sources, in line with emissions reduction goals and climate change mitigation.

To avoid the risk of being ill-prepared for emissions reductions in the coming decades and incurring substantial costs, the Conservation Council recommends implementing a robust framework to monitor and assess the progress of CCUS technology. This framework ensures well-informed decisions about the future of energy and emissions reduction.

**Recommendation:** Introduce interim reporting requirements in 2030 to ensure units are on track with CCUS goals and are able to reach the 30 tCO<sub>2</sub>e/GWh standard in 2035. Increase leniency of CCUS systems to operate under 50 t/GWh to encourage investments into CCUS systems rather than have unabated fossil fuel plants. If CCUS targets cannot be achieved on time, investments need to be diverted away from CCUS and towards proven clean energy alternatives.

## End of Prescribed Life (EOPL)

The "end-of-prescribed-life" provision within the draft clean electricity regulations represents a pivotal concern in the context of residual emissions within the electricity system beyond 2035. To fortify the clean electricity regulations, it is imperative that this provision be either eliminated entirely or significantly curtailed in terms of its time horizon. Presently, fossil fuel electricity generating units constructed prior to January 1, 2025, are granted a 20-year grace period before they must adhere to the full emissions standard. This extended timeframe permits fossil fuel generators commissioned in 2024 to continue unrestricted emissions until 2044.

These leniencies, combined with other flexibilities for fossil fuel generators, introduce a risk of spurring the approval of new natural gas generating facilities, a trend observed in Ontario, the Prairie provinces, and some Atlantic provinces in 2023-24. The proliferation of such facilities carries the potential to substantially escalate the risks of stranded assets for electricity consumers, create compliance challenges, and jeopardize Canada's overarching objective of achieving net-zero emissions in the electricity sector by 2035.

Within the existing draft of the Clean Electricity Regulations, gas units constructed before the regulations take effect on January 1, 2025, are granted a 20-year window before they must comply with the emissions performance standard. The Conservation Council opposes this "grandfathering" clause. It not only undermines the regulations' intent by potentially allowing substantial residual emissions beyond 2035 but also risks promoting a surge of new gas projects, where proponents may expedite commissioning new gas units before January 1, 2025, to extend their compliance timeline. We implore

the Department to consider closing this loophole and eliminating the "end of prescribed life" provision, thereby mandating that all units comply with the emissions standard by 2035, regardless of their commissioning date.

During the development of the regulations, arguments have been put forth that this "end of prescribed life" provision is essential to enable recently commissioned gas units to recoup their construction costs. However, a recent study by Carvolho et al. (Utilities Policy, Volume 73, 2021, 101307) indicates that natural gas units built in this century typically have a payback period of 8.5 to 15 years. This short payback period suggests that there is no risk of passing on costs to consumers if the "end of prescribed life" provision is eliminated and all units are required to comply with the emissions performance standard by 2035.

There is no compelling reason to extend the EOPL beyond 20 years, particularly for investments made without due consideration for the global push toward decarbonization. The IEA's call for a net-zero grid by 2035 in OECD countries since 2021, along with the evidence that natural gas power investments can recoup costs well within the existing 20-year EOPL, supports this perspective.

The removal of this provision will not only reduce residual emissions on the grid in 2035 but also facilitate additional emissions reductions in the years between 2035 and 2044, the final year when grandfathered units could emit freely under the current regulations. This would increase the amount of emissions avoided through the regulations and contribute to a more substantial impact on global climate goals, as advocated by organizations such as the Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA).

**Recommendation:** It is recommended that the full performance standard of 30 tCO<sub>2</sub>e/GWh be uniformly applicable to all fossil fuel generating units no later than January 1, 2035. There should be no "end of prescribed life" provision granted to fossil fuel generators beyond January 1, 2035, regardless of their commissioning date.

## Peaker flexibilities

Currently the CER includes a peaking provision which sets limitations on the use of gas or oil units for peaking purposes. As it stands, this provision establishes specific timeframes and emissions thresholds for peaking units. According to the draft regulations, fossil fuel units, except those combusting coal, can operate for up to 450 hours per year and emit no more than 150 kt/year of CO<sub>2</sub>. The Conservation Council advocates for the Department to maintain this provision as stated in the draft. We also propose a gradual phase-out of the peaking provision, starting from 2035.

The rationale behind this exemption is to ensure grid reliability through the provision of peaking services, especially in grids with limited access to fast-acting baseload power from renewables. However, this exemption should not be used to address concerns related to stranded capital, grid emergencies, or support for larger facilities with carbon capture potential, as these issues are addressed through other provisions. Nor should it be used to promote affordability, as inefficient gas-fired generation does not provide an economical outcome for consumers when subjected to a carbon price of \$170/t or higher.

Numerous alternatives, such as renewable electricity from wind and solar, grid-scale energy storage, existing hydroelectric capacity, interprovincial and inter-regional transmission connections, distributed energy resources, and energy conservation and efficiency measures, can provide grid services and load-carrying capacity. Existing storage technologies can already substitute for most of the roles of simple cycle natural gas plants in providing peaking capacity. Zero-emissions alternatives must be thoroughly explored first before any considerations for natural gas peaker plants and other unabated fossil fuel generation.

The peaker exemption must be clearly defined to serve its specific purpose, ensuring grid reliability without undermining the regulatory signal for emerging zero-emissions options. As the world moves towards grid decarbonization, the availability and economic viability of alternatives like rapidly dispatchable non-emitting generation, energy storage, and demand-side management are expected to expand. Therefore, a broader exemption for non-compliant, emitting generation may weaken the investment signal for low- or non-emitting technologies.

**Recommendation:** It is recommended that the peaking provisions remain at 450 hours per year, or 5% capacity factor, and emit no more than 150 kt/year of CO<sub>2</sub> without being raised. Any region that requires more than this provision must demonstrate that the same electricity system value cannot be delivered economically by a zero-emissions alternative. A gradual phase-out of the peaking provision starting from 2035 should be added.

## Further policy recommendations

### Storage, transmission and efficiency investments for reliability

The clean electricity regulations must maintain a technology-agnostic stance, as the responsibility for enhancing Canada's electricity infrastructure primarily rests with the provinces. Nevertheless, it is essential to recognize the importance of interregional electricity transmission projects in provinces, particularly the Atlantic, to get off fossil

fuels. The CER should acknowledge or discuss the environmental and reliability benefits of building out more interregional transmission.

Moreover, there are various other factors that deserve consideration, such as distributed energy resources, energy efficiency, energy storage, and more. These factors also play a role in achieving a net-zero grid, however, they are not comprehensively addressed in the Regulatory Impact Analysis Statement (RIAS). To fully harness the additional benefits of cost savings and improved reliability without relying on natural gas or other fossil fuel generation sources, it is imperative to incorporate these enhancements into the final CER.

**Recommendation:** Include the analysis of the potential benefits/challenges of interregional transmission between provinces, energy efficiency, energy storage, and distributed energy resources in the final CER.

## Biomass

The CER, while addressing various aspects of emissions control in the electricity generation sector, significantly overlooked the treatment of biomass. The regulations stipulate that emissions from biomass are not to be counted towards a unit's annual electricity generation emissions. This exclusion is grounded in the rationale that, under the United Nations Framework Convention on Climate Change (UNFCCC) reporting guidelines, emissions originating from biomass are categorized separately in Canada's National Inventory Report, assigning them to a different sector altogether. Consequently, the CER effectively exempt emissions derived from biomass from being considered within the unit's electricity generation emissions, which can have implications for the accuracy of emissions accounting and management strategies in this sector. The oversight in addressing the role of biomass in emissions control under these regulations merits further consideration to ensure a comprehensive and effective approach to achieving clean and sustainable electricity generation.

The regulation of wood biomass for electricity generation is intricate, as it spans across various legal domains. The process involves not only electricity-sector legislation but also forestry-sector laws and voluntary certification schemes that influence the wood biomass supply chain. Additionally, both domestic and international laws pertaining to carbon pricing, forest carbon management, electricity-sector accounting, greenhouse gas emissions reporting, deforestation prevention, and biodiversity conservation shape the evaluation of wood biomass as an electricity source.

Regarding the urgent need to reduce greenhouse gas emissions, it is essential to recognize that burning wood biomass for electricity production results in significantly higher emissions compared to other common "clean" or "renewable" energy sources



like wind, solar, and hydropower. In fact, wood biomass generates more emissions per unit of energy produced than coal. The rationale behind considering wood biomass as "clean" or "renewable" electricity stems from the belief that trees and woody vegetation are part of a natural carbon cycle, where carbon is continuously sequestered, released, and sequestered again. It is presumed that over time, this cycle offsets carbon dioxide contributions to the atmosphere.

However, this presumption is complicated. The climate implications of using wood biomass for electricity are closely linked to concerns about deforestation, forest degradation, and biodiversity loss on national and international scales. While it is possible to harvest some wood biomass without causing deforestation or forest degradation, the expansion of wood biomass markets may encourage unsustainable harvesting practices and even the conversion of forested lands into agricultural areas to meet the fuel demand. These scenarios are incompatible with climate mitigation goals, biodiversity preservation, and sustainable development objectives.

Certain jurisdictions acknowledge these interconnections and have initiated coordinated regulations covering forestry, land-use changes, and renewable energy generation. However, comprehensive and integrated regulations of this nature are not yet uniformly implemented across Canada.

These recommendations were provided by East Coast Environmental Law and commissioned by the Conservation Council:

[https://www.conservationcouncil.ca/wp-content/uploads/2023/09/ECEL\\_Report-on-the-Regulation-of-Biomass-Used-to-Generate-Electricity\\_Public-Distribution-Version\\_July-2023.pdf](https://www.conservationcouncil.ca/wp-content/uploads/2023/09/ECEL_Report-on-the-Regulation-of-Biomass-Used-to-Generate-Electricity_Public-Distribution-Version_July-2023.pdf)

**Recommendation:**

- The CER should not be scoped to apply exclusively to electricity generation facilities that combust fossil fuels. A restricted scope of this kind would not only exclude biomass-only generation facilities from the regulatory regime but could also have the unwanted effect of incenting the commissioning of new wood biomass burning facilities that would, in effect, get a regulatory "free pass".
- Electricity generated from the combustion of wood biomass should not be exempted from the emissions performance standard imposed by the CER.
- The emissions performance standard imposed by the CER should not presume that wood biomass is a non-emitting or low-emitting fuel. At minimum, wood biomass used to generate electricity should be assigned a carbon intensity value that takes into account the GHG emissions associated with harvesting, producing, and transporting wood biomass fuel products. More stringently, a carbon intensity value reflecting the actual GHG emissions caused by burning wood biomass to generate electricity could be assigned.

- The emissions from biomass should be treated similarly to how hydrogen is treated in the CER, where upstream emissions are factored into the emissions profile.
- In addition or as an alternative to assigning appropriate carbon intensity values for wood biomass used to generate electricity, the CER should impose GHG emissions saving requirements on electricity generation facilities combusting wood biomass fuel, requiring such facilities to demonstrate that the use of such fuel over time has actually lowered GHG emissions that would have been produced through the use of other fuel.
- In addition or as an alternative to assigning appropriate carbon intensity values for wood biomass used to generate electricity, the CER should impose an energy efficiency standard for electricity generation facilities that combust wood biomass fuel. 60% efficiency is the minimum standard proposed, but a higher standard may be more appropriate.
- In addition or as an alternative to assigning appropriate carbon intensity values for or imposing energy efficiency requirements on wood biomass used to generate electricity, the CER should require the use of BECC technologies where they are technologically feasible.
- To support accurate and transparent information flows between electricity-sector and forestry-sector regulators, and to enable more accurate and transparent electricity-sector and forest carbon accounting, the CER should impose detailed reporting obligations that require the operators of regulated facilities to document the sources of all biomass fuel used to generate electricity.

## Carbon pricing

The necessity of removing the electricity sector from the Output Based Pricing System (OBPS) is highlighted by several key factors. Currently, the electricity sector does not bear the full brunt of the carbon price and operates within the OBPS framework. This situation provides generators with a protective shield against the complete carbon price, which diminishes their motivation to curtail emitting generation, especially in the case of unabated fossil gas. Moreover, the federal government's method, which employs fuel-specific benchmarks and excludes renewable generators, dilutes the incentives for emissions reduction. This affects both the selection of electricity sources and the construction of facilities. To effectively complement the CER and achieve climate goals, reforming the carbon pricing system for the electricity sector is imperative. The most effective approach is the removal of the electricity sector from the OBPS. It is a critical step towards achieving a net-zero emissions target. It is vital to uphold in-province revenue distribution to address affordability and incentivize electrification, while averting substantial interprovincial transfers. Although the implementation of these changes may

extend beyond 2026, the intention to apply the full carbon price by 2030 holds paramount significance.

**Recommendation:** The electricity sector should be removed from the OBPS and exposed to the full carbon price to ensure the sector commits to full decarbonization by 2035.

## Negative emissions

Achieving a net-zero emissions goal by 2035 needs to include negative emissions strategies. While strengthened carbon pricing and the CER can significantly drive down emissions, there remains a likelihood of residual emissions persisting beyond 2035. To meet the federal government's ambitious target, Canada must counterbalance these lingering emissions.

A comprehensive policy framework needs to be created to address these residual emissions. Negative emissions technologies play an important role in addressing residual emissions such as direct-air capture paired with carbon capture and storage (DAC-CCS) and bioenergy carbon capture and storage (BECCS). These methods can directly capture carbon dioxide and permanently store it deep underground, ensuring the permanence of sequestered emissions and delivering genuine net-zero results by offsetting the residual emissions.

The electricity sector will not rely on negative emissions in the long term as zero-emissions technologies improve, but a starting point is needed to encourage the use and advancement of these technologies. As the grid continues to decarbonize, negative emissions can be repurposed for other sectors.

**Recommendation:** The CER should include a strategy to incorporate negative emissions technologies to offset the expected residual emissions from the electricity sector to stay on track with a net-zero grid by 2035.

## Conclusion

In conclusion, the Clean Electricity Regulations (CER) are integral to achieving the Government of Canada's ambitious goal of a net-zero electricity grid by 2035. These regulations, combined with existing policies like carbon pricing and federal investment tax credits (ITCs), form a comprehensive policy framework. We urge the Department to consider the recommendations listed above and look for ways to make the CER stronger, not weaker.

Please feel free to contact the Conservation Council of New Brunswick if you have any further questions about this submission. We look forward to seeing this regulation push past CG II and implemented as soon as possible.

Warmest regards,

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