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Environment and Climate Change Canada
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Comments submitted via email to EDC-DEC@ec.gc.ca.

RE: A clean electricity standard in support of a net-zero electricity sector discussion paper

On behalf of Ontario's more than 3,000 environment and cleantech firms, the Ontario Environment Industry Association (ONEIA) is writing to provide our comments on the clean electricity standard in support of a net-zero electricity sector discussion paper.

About ONEIA

Ontario is home to Canada's largest group of environment and cleantech companies. The most recent statistics from the federal government show that Ontario's environment sector employs more than 226,000 people across a range of sub-sectors. This includes firms working in such diverse areas as materials collection and transfer, resource recovery, composting and recycling solutions, alternative energy systems, environmental consulting, brownfield remediation, and water treatment – to name just a few. These companies contribute more than $25-billion to the provincial economy, with approximately $5.8-billion of this amount coming from export earnings.

ONEIA members are committed to engaging with governments as they develop policies and regulations that are consistent with our principles of sound science, a sound environment, and a sound economy. To that end, we convened a working group of ONEIA members drawn from across the energy sector to review the discussion paper and develop this submission.

Responses to key questions

General

1. Should interim standards be included in the period before 2035?

   Yes, we believe that Environment & Climate Change Canada (ECCC) should have interim standards to track and understand progress towards meeting the requirements for 2035. The Clean Electricity Standard (CES) would drive substantial investment across Canada, and we need to ensure that we are on track to meet the target. Therefore, we would suggest annual assessments on progress. 2027 would be a key assessment point to ensure that we are on track, and 2030 to determine if substantial change is occurring and/or whether alternative approaches are required.

2. How should the CES regulation be designed to minimize stranded capital assets and associated rate impacts?

   We believe that the CES regulation should take an outcomes-based approach to allow natural gas assets and other fossil fuel-based generators to understand the direction and provide opportunities for them to adjust/pivot to meet the requirements of the CES. For example, a natural gas co-generation facility could run on renewable fuels or convert to hydrogen. We also believe that the CES needs to address resiliency within the natural gas system in Canada.

3. What would be an acceptable end-point emissions intensity standard to achieve the objective of the CES?

   In implementing the CES, in theory the end-point emissions intensity standard target should be 0 gCO2e/kWh. However, that is likely an unreasonable expectation in Canada where considerations such as remote communities, extreme weather, and others would make this challenging. Therefore, it is recommended that an intensity of less than 10 gCO2e/kWh as an acceptable objective.

4. How do considerations differ for non-competitive electricity markets, vertically integrated utilities, etc.?

   Non-competitive electricity markets are challenging to work in, and therefore we suggest that barriers be removed to allow for a more free-market approach to foster economic growth and the ability to meet the objectives of the CES.

   For vertically integrated utilities, we believe that ECCC needs to clearly outline the requirements for both their regulated and unregulated aspects to ensure that they must compete with other entities in the deployment of capital in meeting ECCC's objectives.

   We also recommend that ECCC include provisions that consider public-private partnerships between electric utilities and private entities to encourage private sector investment in low-carbon sources.

   Compliance flexibilities

5. Should the CES offer compliance flexibilities?

   a. What kinds of flexibilities?

      The CES should allow compliance flexibilities such as sourcing renewable electricity and renewable fuels from other jurisdictions to allow for the lowest cost generation possible.

      Another flexibility that we suggest is allowing virtual net metering arrangements for sites that may not be able to deploy clean energy sources on-site. This would enable such sites to maximize power purchase options.

   b. Should the flexibilities be targeted to individual generating units? To corporate fleets of units, such as fleet averaging, etc.?

      We do not have any issues with flexibility at either the individual generation units or a fleet of assets if the objectives are met. However, fleets of heterogeneous generators or flexibility sources, such as battery energy storage, should also be considered.

   c. What constraints or limitations should be incorporated into flexibilities?

The constraints/limitations should be focused on the development of the carbon intensity around the source of the energy to ensure that the proper lifecycle carbon is developed. For energy storage type assets, a ceiling on net carbon intensity should be considered.

6. Under what conditions should offset credits available through federal, provincial/territorial, or other programs be permitted?

   The creditability of offsets requires further discussion. However, we do not see any issues with renewable energy credits as they are outputs based and utilized as a tool throughout North America by utilities and corporations on a regular basis. A mechanism to consider is a ceiling on carbon offsets that can be purchased to meet net zero goals, which would help ensure that new net-zero generation is being developed.

   We would also recommend investigating the use of regulated carbon offsets under provincial and federal programs for a minimum threshold of compliance obligations. For example, if the standard is based on blended carbon intensity targets, then offsets should only be allowed for a proportion. However, the proportion would need to be calculated to ensure that it does not disincentivize new renewable energy.

7. To what extent can negative emission technologies like BECCS and DAC contribute to meeting the obligations of a CES regulation? To what extent should they be allowed to contribute to meeting those obligations?

   We believe that all technologies can play a role and that ECCC should take an outcomes approach and let the technology determine the most cost-effective way of meeting the objectives. We have no issue with Bioenergy with Carbon Capture and Sequestration and Direct Air Capture being included in the program.

8. Should compliance be assessed for the electricity sector on an annual or multi-year basis?

   We believe that an annual evaluation of progress is required.

   Alignment with carbon pricing

9. Should the way in which electricity generation is currently treated by carbon pricing be changed to facilitate achieving NZ2035?

   As currently understood, large facilities are already obligated under the output-based pricing system (OBPS), and smaller facilities are required to pay a carbon tax for consumption. Given carbon taxes in place for regulating emissions associated with power generation, considerations surrounding the interaction of the CES and OBPS should be examined.

10. How might the treatment of electricity under the OBPS have to change to align with the CES?

    The electricity intensity benchmark needs to be related to the targets and performance under the CES because they both have to move in line. Both tools are meant to achieve decarbonization of the electricity grid mix, and therefore they need to be coordinated.

    We also believe that the CES needs to include tracking not only of positive emissions, but also of the emissions offset by non-emitting generation sources. We feel that this is the only way that Canada will be able to measure our progress towards true net-zero.

    Treatment of natural gas generation

11. What is the role of natural gas in a net-zero electricity sector before 2035? Post-2035?

Natural gas generation facilities should be able to play a role pre and post 2035 depending on their fuel source. They could run on Renewable Natural Gas (RNG) or hydrogen and may need to run on natural gas in certain circumstances to support electrical grid stability at peak times.

12. What flexibility should be allowed to use natural gas to maintain reliability in rare and extreme weather, emergencies, or other special circumstances? Which additional operating conditions/scenarios, if any, should be given special consideration?

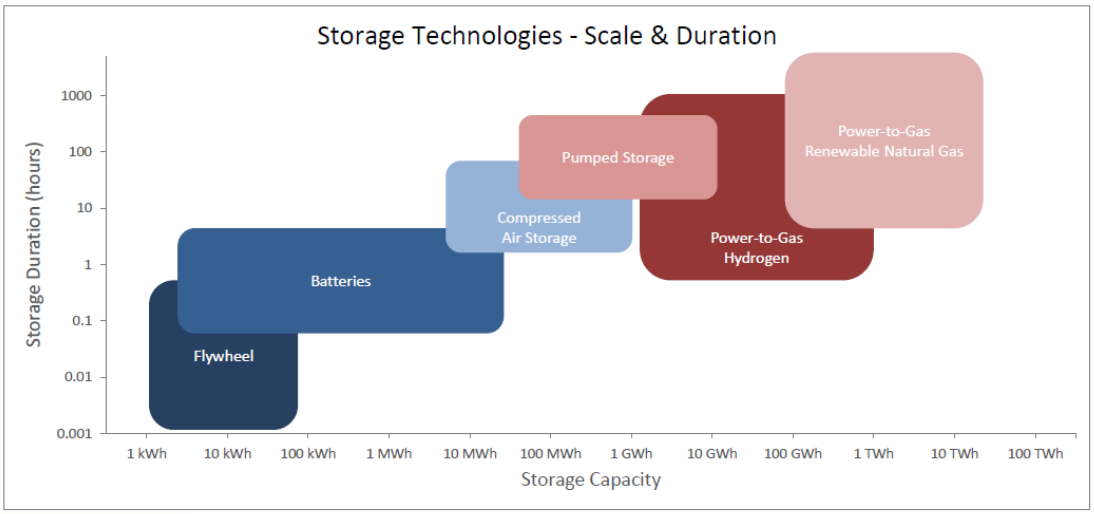
    We think that flexibility should be given to natural gas generation to maintain reliability in rare and extreme weather conditions. However, that does not mean that these assets must use natural gas. They could use RNG or hydrogen that has been stored in the natural gas storage system. We also believe that the CES consider flexible, dispatchable natural gas plants that offset their emissions, primarily through PPAs with RNG/hydrogen and secondarily through carbon offsets.

    a. If natural gas has an electricity system-support role post-2035, what are the expected impacts on the rollout of emerging system support technologies such as energy storage?

       As discussed earlier, we believe that an outcomes-based approach is required, which will allow technologies such as energy storage to play a role pre and post 2035. We recommend that ECCC develop a system in which all durations of energy storage technologies are considered, rather than only shorter duration technologies. For example, seasonal energy storage technologies such as power to hydrogen, or power to synthetic methane, should be able to play a role in an evolving electricity system. An approach should be considered where the net carbon intensity of the charge and discharge patterns for a given energy storage unity are monitored. This will enable the most accurate tracking of the GHG intensity of the unit.

       The program should also allow flexibilities for longer and shorter duration energy storage technologies co-located. This combination would allow for more grid stability. Tangibly, the faster ramp times of shorter duration storage can support the seasonal storage aspects of power to hydrogen.

       The chart below provides an overview of storage technology scales and durations. It is recommended that all of these storage technologies, and various combinations of them, be considered in creating the CES.



b. If natural gas has a role in generation post-2035, what are the expected impacts on the penetration of nascent generation technologies like SMRs (Small Modular Reactor), geothermal electricity, etc.?

We believe that different types of technologies will be required in different parts of Canada based on the local natural resources available. Therefore, we believe that an outcomes-based approach is required and would allow technologies such as SMRs, and geothermal to play a role pre and post 2035.

Treatment of industry, private generation, and remote generation

13. How should the CES treat electricity generated by cogeneration units that are sold to the electricity system? Should the CES apply fully to cogeneration units by 2035 or should it phase-in its application to cogeneration units after 2035?

We believe that the CES should apply to co-generation units as they are selling electricity into the system, and therefore the carbon intensity of their electricity matters. We see no issue in these units sourcing renewable energy to fuel their co-generation units.

14. What are the benefits of applying a CES to industrial generation units? What are the challenges of doing so? Of not doing so?

Applying a CES to industrial generation units would help ensure that Canada can meet its climate change objectives. We see no issues with fuel switching for these units. Some of these industrial facilities have very large power requirements, and applying the same standards to them could incentivize either plugging the facilities into the grid or formation of distributed grids that integrate various types of energy generation which could result in greater collaboration within the industry.

15. How should the CES consider electricity generation in remote, northern, and Indigenous communities?

We recognize that electricity generation poses many challenges to remote, northern, and Indigenous communities, and we believe that these communities should have access to financial support for adoption of cleaner sources of electricity. Currently, many such communities may be using diesel generators which are costly to operate and can cause health issues due to their emissions. Conversion to cleaner forms of energy would be beneficial and may be closer to parity on a cost per kWh basis. However, it is crucial to ensure that remote, northern and Indigenous communities have a reliable source of energy.

16. How should the CES consider distributed energy resources?

Distributed energy resources (DERs) will play a critical role in the drive to net-zero, particularly as it pertains to regions with low or poor electricity infrastructure. Additionally, enhancing the demand flexibility of urban areas as they electrify will reduce the strain on the grid and the need to build out costly transmission infrastructure. The CES should not only consider the emissions of sources that are currently classified as “generators” but also the environmental benefits of flexibility (i.e., demand curtailment during periods of higher emissions). For example, a commercial building can reduce its demand through a number of means including behind-the-meter battery storage, load curtailment, or through electric vehicles integrated to the grid (through bi-directional charging technology). While this does not generate electricity, it can reduce overall demand on the grid when carbon intensity is high, and therefore creates an environmental benefit. Load flexibility and its positive impact on the environment need to be considered, not just generation sources. Funding from the CES can also be used to promote DERs or other demand-side flexibility sources in electrically constrained urban areas, or areas with poor infrastructure.

Treatment of biomass

17. If CO_2 emissions from biomass combustion are not counted towards compliance under a CES, to what degree might biomass generation increase?

    If CO_2 emissions from biomass combustion are not counted towards compliance under the CES, we would expect to see a significant uptake in biomass generation. We believe that ECCC should recognize the lifecycle carbon for these types of sources to ensure that we are sourcing and managing the appropriate biomass sources and provide specific guidance on the eligible biomass. However, we are aware that biomass from Canada is being exported to other countries to support their decarbonization strategy. Therefore, we think Canada should utilize this resource at home to support our decarbonization strategy while driving economic growth.

    We have seen policies in California for managing black carbon (GHG Short-Lived Climate Pollutant Inventory | California Air Resources Board) related to biomass management and would encourage ECCC to explore the role that these types of policies could play in Canada to manage our forests for beneficial energy use.

18. What types of biomass are suited to electricity generation? What are their characteristics with respect to regenerative life cycle, non-CO_2 GHG (Greenhouse Gas) emissions, and land use characteristics?

    We believe that all types of biomass should be studied further from forestry residues to agricultural residues. ECCC needs to ensure that the sources are well understood, and that soil organic carbon is not impacted through the harvesting of these residues.

19. What emissions reporting and compliance requirements for biomass generation should be considered to ensure that nature is protected, and land-based emissions do not increase?

    Canada needs to focus on the lifecycle carbon from each of these sources including understanding their impact on land use, etc.

Other Questions

20. What additional investments are anticipated to be necessary to achieve NZ2035 to help ensure affordability for consumers?

    We believe that ECCC needs to address transmission and distribution system changes to facilitate the movement of clean electricity across Canada. The electricity system was not designed to have the flexibility that it needs now, and in the future, to meet the 2035 objectives.

    We also believe that ECCC needs to address the bureaucratic issues that exist in federal and provincial policies that create barriers in expediting the deployment of infrastructure such as siting and permitting of these critical assets.

    We believe that ECCC needs to address issues related to non-competitive markets and the role that vertically integrated utilities can play in making these sources of electricity unaffordable to the consumers. For example, in Ontario distribution companies are only incentivized to make capital expenditures for a return, rather than being incentivized for the outputs they create. We believe that ECCC should review frameworks that incentivize utilities to make cost effective investments, such as the RIIO-2 (Revenues = Incentives + Innovation + Outputs) Framework presented by Ofgem in the UK (https://www.ofgem.gov.uk/publications/riio-2-framework-consultation). While we recognize that ECCC may not have jurisdiction over provincial energy regulators, the intersection of energy policymaking at the provincial level and environmental mandates at the federal level should be considered.

21. What role could existing and expanded energy efficiency programming play in helping to meet new demand as they transition towards net-zero 2035? What are the constraints for additional efficiency measures? Technological? Policy? Other?

    Existing and expanded energy efficiency programming should play a role in helping to meet the transition by 2035. The CES should include energy efficiency measures that help avoid/reduce energy consumption, especially measures targeted to times of highest carbon intensity. Doing so could have a large impact on reducing GHG emissions. Furthermore, additional grid flexibility would also allow for higher penetrations of renewable energy on the electricity grid, accelerating the transition to net-zero. Current constraints of energy efficiency measured include uncertain ROI, which is something that could be alleviated within the CES.

22. What other factors should the government consider in developing the CES?

    The government should consider incorporating some elements of the CES into existing energy pricing mechanisms. For example, in Ontario the most expensive hours of demand for large energy users (the 5 Global Adjustment peaks), tend to coincide with the highest carbon intensity hours of electricity generation. In a way, this provides a proxy for carbon pricing as large energy users are incentivized financially to reduce their demand during those hours.

    Additionally, the government should consider the lifecycle emissions of all generation sources in the CES (for example, fugitive emissions in traditional natural gas developments, or the lifecycle costs of lithium extraction).

We welcome the opportunity to discuss our position and recommendations further. Please contact our office at info@oneia.ca or at (416) 531-7884 should you have any questions.

Yours truly,

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