

29 March 2019

RE: ERO number 013-4551 - Making polluters accountable: Industrial Emission Performance Standards

The Canadian Wind Energy Association (CanWEA) is pleased to provide comments on the Environmental Registry of Ontario (ERO) Listing # 013-4551, *Making Polluters Accountable: Industrial Emission Performance Standards*.

CanWEA believes that clean energy must play an important role in any meaningful and effective climate change strategy in Ontario, and as the association representing the wind energy industry in Canada, we are contributing the following commentary in response to this consultation. We believe provinces should have the opportunity to develop and implement climate related policies equivalent to or more stringent than the Federal carbon pricing backstop in order to ensure such policies take into account regional specificities and provincial priorities. CanWEA supports the Ontario Government's efforts to reduce greenhouse gas emissions and we believe that the backbone of any such plan is deep electrification supported by a strong, non-emitting electricity sector.

Our overarching goal is to ensure that Canada moves towards a virtually 100% non-emitting electricity grid by mid-century to help ensure that each region of the country can contribute meaningfully to Canada's climate change and non-emitting electricity commitments for 2030 and beyond. While ambitious, this is not unprecedented. For example, ***one quarter of the United States' population now live in a state that targets 100% non-emitting electricity.***¹ Ontario has already made great progress in this regard, with the IESO reporting in 2018 that more than 93 percent of electricity generated in Ontario came from non-greenhouse gas emitting* resources.²

Our main focus in response to this consultation is to: (a) ensure Ontario maintains and builds upon the strides it has made in decarbonizing its electricity system, (b) recognize that new natural gas generation is the main threat to such an outcome, and (c) ensure that Ontario's emission standards provide a long-term and meaningful price signal that ensures that non-emitting alternatives to natural gas are given full consideration as Ontario moves to build new electricity supply.

Numerous studies have been undertaken to examine how Canada can meet its international climate change obligations. This research consistently concludes that the electricity sector must play an important role in reducing emissions because mature technologies already exist that can reduce greenhouse gas emissions, are economically competitive, and can be deployed at large-scales quickly. A

¹ New York and Colorado by 2040, California and Hawaii by 2045, Connecticut by 2050, and Illinois, Nevada and Maine.

² IESO 2018 Year-End Electricity Data, <http://www.ieso.ca/en/Corporate-IESO/Media/Year-End-Data>

*At the point of generation. Does not reflect lifecycle and upstream emissions.

low-carbon electricity system not only contributes to emission reductions on its own, but also becomes an enabling backbone for additional greenhouse gas emission reductions in other sectors. While any climate change strategy must have a strong emphasis on energy efficiency, there is little doubt that the electricity system will need to continue to grow and it will only be able to do this if it is very low-carbon or no-carbon.

In relation to Ontario's plan for emissions performance standards, our view is that ***a strong and clear long-term price signal must be sent to investments in new electricity generation to gradually shift future investments toward increasingly lower emissions intensity energy resources.*** We recognize that there are instances where investment is less elastic to price signals, for example: existing power plants that are yet to be amortized; operations that do not have access to powerlines or pipelines (e.g. remote communities and mines); and/or industrial co-generation. However, for the reasons outlined in this letter, ***we do not feel that there is any valid rationale to fully shelter future investments in new greenhouse gas emitting natural gas-fired electricity generation from a strong and clear long-term price signal.*** The Ontario plan needs to provide a clear, gradually increasing price signal over time that would incent a shift in investment toward lower emissions intensity energy resources. A price signal must be strong enough to provide a meaningful incentive for changes in investment behaviour.

Sheltering new greenhouse gas emitting natural gas-fired electricity generation from carbon pricing is not essential to ensuring affordable electricity. While natural gas has a role to play in Ontario's grid today, minimization to the extent necessary through strategic utilization does not imply increased costs for consumers. Price discoveries from recent competitive procurements for new wind and solar electricity throughout Canada have revealed pricing lower than, or competitive with, the historic averages for coal and natural gas. Cost-competitive alternatives to new natural gas generation exist today. According to an authoritative analysis released by U.S. investment firm Lazard³, wind energy costs have dropped 69 per cent since 2009, and seven per cent just in the last year. In comparison, the key conventional energy sources of coal plants, natural gas combined cycle plants, and natural gas peaker plants have seen much more modest declines in the same period, while the LCOE of nuclear has actually increased. This tells us that building and operating new wind energy can cost less than continuing to operate fully-depreciated conventional generation facilities.

Sheltering new natural gas-fired generation is not needed to ensure reliable electricity systems. Being subject to the full carbon price does not preclude new natural gas generation. It will be available as a resource option where required and the system will continue to be reliable. However, the integration of renewables does not pose the reliability obstacles that some stakeholders imply. In provinces with hydropower there are no barriers to having virtually emission free electricity systems as is currently the case in Quebec and Manitoba. In other provinces high penetrations are also possible and technical solutions will be increasingly available. The flexibility of a power system refers to "the extent to which a power system can modify electricity production or consumption in response to variability, expected or otherwise". This flexibility can be provided by a variety of non-emitting options including inter-provincial non-emitting electricity trades, energy storage and demand response. Flexibility can also be provided by rapid ramping of natural gas-fired electricity generators, although this rapid ramping dramatically increases the emissions intensity of the generators. The full carbon price would balance decisions

³ Lazard's Levelized Cost of Energy Analysis – Version 12, <https://www.lazard.com/media/450773/lazards-levelized-cost-of-energy-version-120-vfinal.pdf>

between natural gas and alternative non-emitting options. **Sheltering natural gas will not make our systems more reliable but it will simply result in an over build of natural gas units and limited development of non-emitting alternatives and the associated flexibility opportunities.**

We look forward to clarification around how new emitting generation facilities in Ontario will be treated under the emissions performance standards and ***we recommend: that for new natural gas facilities (and any other new fossil fueled generation) in Ontario any initial standard must ramp down to 0 t/GWh in 2030.*** This standard would not affect existing facilities, remote communities or mines nor industrial co-generation.

In its 2017 energy supply and demand projections to 2040, Canada’s National Energy Board (NEB) published a “reference case” (business-as-usual scenario) that indicated the nation will need new electricity generation facilities to power the coming decades⁴. This reference case predicts that wind energy will be the second largest source of that new power through installation of an average of roughly 600 MW of new wind energy capacity every year. This significant projected growth of wind energy is a reflection of wind energy’s cost-competitiveness. It also predicted that natural gas would be the largest source of new electricity generation in Canada over that period. As a result, little additional decarbonization of the electricity grid occurs between 2017 and 2040, and natural gas-fired generation increases by 86% from 2016, growing from 8 to 15% of total supply⁵. As such, this means our “powering-past-coal” will be dominated by a “dash-to-gas”. Canada will fall short of our 90% non-emitting electricity target by 2030, moving only to 84% from 80% in 2016.

Beyond climate change, there are also economic reasons to seek to ensure growth in natural gas generation is strategically minimized as natural gas is exposed to both carbon and commodity price risks to which wind energy will always be immune.

Wind energy is a leading low-carbon technology for electricity generation that has rapidly become low cost and extremely cost-competitive with a proven track record of high levels of rapid deployment. Several Canadian jurisdictions have already used or will be using wind to help replace electricity that traditionally was generated from coal including Ontario and Alberta. Beyond coal, wind energy can reduce greenhouse gas emissions in the electricity sector by displacing other fossil fuels for electricity generation, notably natural gas.

Without continuing to develop renewables, any gains made by phasing out coal can be overwhelmed by the growth in other fossil fuels such as natural gas, as is predicted in Alberta⁶. In Ontario, the 2013 progress report released by the Environmental Commissioner of Ontario indicated that the progress made in reducing greenhouse gas emissions from the electricity sector will be threatened over time by significant increases in the use of natural gas to generate electricity⁷.

While Ontario’s phase-out of coal-fired generation represents Canada’s single largest greenhouse gas emissions reduction initiative to date, further reductions are possible and will be required if Ontario is

⁴ National Energy Board (2017), *Canada’s Energy Future 2016: Update* https://www.neb-one.gc.ca/nrg/ntgrtd/fttr/2016updt/index-eng.html#s3_6

⁵ National Energy Board “Canada’s Energy Future 2018”

⁶ IPPSA (2013) “Trends in GHG Emissions in the Alberta Electricity Market - Impact of fuel switching to natural gas”

⁷ Environmental Commissioner Gord Miller’s 2013 annual report (2013) “*Failing our Future*”

to set and meet its own greenhouse gas emission reduction targets. With Ontario's grid now over 93 percent non-emitting⁸, it has tremendous potential to be leader in any effort to support emissions reductions. Thus, any considerations for new electricity supply in Ontario should be taken with serious consideration toward preserving the progress made in the electricity sector so that Ontario remains well positioned to be a leader in clean electrification. Fortunately, we have only begun to capture wind energy's potential to reduce emissions in Ontario. There remain enormous untapped, cost-effective wind energy resources across the province that have the potential to generate further greenhouse gas emissions savings by producing additional clean, emissions-free and affordable electricity.

Ontario will need new electricity generation supply in the 2020s to help ensure the province has enough affordable power while it is refurbishing its Darlington and Bruce nuclear-generating stations and other assets reach end of life and will no longer be available to supply power. In addition, meeting greenhouse gas emission reduction targets will require Ontario to continue to prioritize emissions-free electricity generation that is procured competitively in order to maintain affordability. This will be important while the province moves to increase its use of electricity to power many sectors of the economy, from transportation to industrial processes and buildings. Rapidly-declining costs have made wind energy the lowest-cost source of new electricity generation available to Ontario and across Canada today.

Ontario's climate change plan should target additional greenhouse gas emission reductions and explicitly work to limit and prevent increases in greenhouse gas emissions from the electricity sector. Further expansion of the use of renewable energy sources like wind energy procured through competitive processes, and continued advancements in the various storage and demand response technologies that help to stabilize the delicate balance between supply and demand while minimizing the need to activate backup fossil fuel generators, will be required to protect the gains made in the electricity sector.

We thank you for bringing forward a made in Ontario plan and look forward to the province taking a leadership role on climate action, and clean growth driven by deep electrification. CanWEA would be pleased to meet to discuss this submission further.

Sincerely,



Brandy Giannetta
Regional Director, Ontario
Canadian Wind Energy Association

⁸ IESO 2018 Year-End Electricity Data, <http://www.ieso.ca/en/Corporate-IESO/Media/Year-End-Data>

**At the point of generation. Does not reflect lifecycle and upstream emissions.*