environmental defence

Submission to Ontario Ministry of Energy

Feedback on IESO Pathways to Decarbonization Study

May 12, 2023

Submitted by:

Lana Goldberg
Ontario Climate Program Manager
Environmental Defence Canada
lgoldberg@environmentaldefence.ca

Answers to consultation questions re “no-regret” recommendations

1. Canada’s Impact Assessment Act (IAA) ensures that projects with possible harmful environmental impacts are properly assessed before they are given the green light. This is a necessary process, especially for carbon-intensive projects. We are concerned with the level of rigour of Ontario’s Environmental Assessment process at present and firmly believe that Federal-level impact assessments are necessary and should not be expedited.

Ontario’s Environmental Assessment Act (EAA) has undergone and continues to undergo significant reform which opens up the potential for the EAA to allow environmentally destructive projects to move ahead without an environmental assessment. Already, many projects are not required to pass an environmental assessment before they can move ahead.

That said, we could potentially support an expedited process to approve renewable energy projects since potential impacts do not tend to be serious or widespread. We would not say the same for nuclear energy projects nor gas even if there is a stated intent to abate emissions in the future. These projects involve significant environmental risks and must be studied thoroughly.

Beyond government assessments, renewable projects should undergo consultation with municipalities and communities (including Indigenous communities where projects are on traditional territories) and include community benefit agreements in cases where communities will overlook the project. Community benefits have been shown to have a significant impact on the levels of community acceptance that projects enjoy.

We are concerned that there has been very little effort made to encourage the construction of renewable projects during this government’s terms, and that the current

long-term procurement process seems structured so as to preclude renewables from bidding. We encourage the government and IESO to move swiftly with plans to procure more wind and solar power, in particular.

2. New long-lived energy storage (such as pumped water and compressed air storage) is essential for the transition to renewables and should be immediately prioritised. Ontario is home to the majority of storage capacity and innovative technologies in Canada. This capacity should be further expanded to balance intermittency for wind and solar power.

We do not support nuclear refurbishments or the construction of new nuclear generation due to the risk of nuclear reactive material release into the environment and the challenges in dealing with nuclear waste. Nuclear power is also extremely expensive to build, has long lead times, is inflexible, and is therefore ill-suited to match Ontario's demand profile. Furthermore, Ontario does not need additional nuclear power because the province already has substantial base load power from hydro and existing nuclear. Ontario has safer and much cheaper alternatives in wind and solar power.

Individual waterpower facilities will have to be studied to ensure there are no major negative impacts on the natural environment and on nearby communities, especially on Indigenous communities if the sites are on traditional territories.

All generating projects require early engagement processes and need to undergo public, municipal, and Indigenous consultations and should not go forward without the approval of municipalities and consent of Indigenous communities when projects are being proposed on traditional territories.

3. We do not agree with the IESO that new gas generation is needed. Independent studies from multiple organisations disagree with this analysis and in our view the IESO has not provided a clear rationale for new gas plants.

Numerous reports, including those by the David Suzuki Foundation, Toronto Atmospheric Fund, and academics have found that Ontario can meet its growing electricity needs with renewable energy sources. It is now clear that wind and solar can provide continuous energy and meet high demand periods when paired with currently available, proven storage technologies. The IESO's own report on Distributed Energy Resources (DERs) also indicates that extra capacity needs can be met with a combination of DERs.

We also reject the implication that opting for renewables over gas will cost more. The price of renewable generation has dropped precipitously in recent decades with wind and solar now the cheapest form of new electricity generation. Wind and solar can easily compete with gas, even when the price of storage is factored in. In addition, distributed renewables can be built close to demand centres, reducing the need for long transmission corridors.

A recent study from Clean Energy Canada shows that electricity from wind and solar is already cost-competitive with fossil gas generation in Ontario. When the current carbon price is taken into account, wind and solar are much cheaper than fossil gas, with costs set to decline another 40 per cent by 2035.

Furthermore, given the short duration of contracts being offered by the IESO, the clause that assures generators will get paid if forced to shut down due to forthcoming federal Clean Electricity Regulations, and the federal intent to move electricity out of the OBPS (and therefore EPS in Ontario) and price it fully (at $170/tonne or more in 2035), gas is certain to be a very costly option in the future.

Investments in renewable energy need to be made now to pave the way to a clean, sustainable, and affordable electricity system. Most analysts agree that electrifying our society and fuel switching will reduce costs overall. The sooner the government invests in building projects and the necessary transmission lines, the sooner we will see the cheaper electricity prices that wind and solar offer.

Investments in clean energy resources like wind and solar are also necessary in order to prevent forecasted skyrocketing greenhouse gas emissions from the electricity sector.

4. We are very sceptical about the IESO's cost estimates. About half of the IESO's estimated costs are for new nuclear generation which is by far the most expensive form of electricity generation. The same amount of wind capacity is shown to cost a fraction of the price (~20%). Investment costs for clean electricity infrastructure can be significantly lowered by eliminating new nuclear projects. As well, the costs for wind are inflated in the IESO's P2D study.

In contrast to the IESO's high projections, the Toronto Atmospheric Fund (TAF) calculated that transmission expansion costs would only be 5 - 8.4 billion dollars for a scenario in which wind and solar are expanded to meet Ontario's energy needs, along with demand response efforts and storage investments. TAF's report as well as Clean Energy Canada's show that renewable generation provides the lowest cost for new supply of energy.

If the IESO were to follow its own recommendations from its Distributed Energy Resources (DERs) report and create opportunities for local renewables and storage facilities, there would be less need for large transmission lines and infrastructure costs would decline further.

Ontario could also take advantage of the Federal government's Clean Electricity Tax Credits by committing to net zero by 2035. This will decrease the costs of future clean energy projects as well as electricity bills.

If Ontario makes the investments in renewable infrastructure, we will soon reap the financial benefits as wind and solar offer cheaper rates for consumers. The government needs to make the infrastructure investments so Ontario can quickly transition to clean energy and pay less for electricity.

The cost of building a clean energy system should be compared to the costs of building new gas plants, importing and using increasingly expensive fossil gas, carbon pricing, and the cost to ratepayers for the possible stranded assets until around 2040 if gas plants have to be shut down due to the federal Clean Electricity Regulations.

5. While hydrogen is likely part of the fuel mix of the future, it should be reserved for the hardest to decarbonize sectors (like cement), not electricity.

The push to use hydrogen in the electricity sector is simply a tactic to permit the construction of new gas plants and is not a realistic solution to decrease electricity emissions. There is currently not enough hydrogen on the market to power existing and new gas plants. In terms of existing hydrogen, the vast majority of what is available today (99%) is produced using natural gas (called "gray" hydrogen) and its use leads to emissions comparable to those from regular gas plants. It will be a long time before there will be significant amounts of "green" hydrogen being produced from renewables. Even if and when this product becomes readily available, "green" hydrogen also has emissions impacts. Rather than introducing convoluted schemes to continue using gas plants, Ontario should invest directly in clean renewable energy which have *no* emissions.

6. Current energy efficiency plans are insufficient and need to be scaled up, funded, and made accessible to all Ontarians. This includes offering residents and small business owners grants to retrofit their homes and buy energy efficient products. We would especially like to see energy efficiency programs and grants for low-income Ontarians for whom energy bills are a real concern and who may not have the funds needed to make efficiency upgrades. Energy efficiency also means requiring industry to implement energy efficiency measures for their lighting, air conditioning, and industrial processes.

The IESO's report has not adequately addressed energy efficiency and how scaled-up measures could lower electricity demand. We urge Ontario to embrace a conservation-first framework and to enable the achievement of all cost-effective conservation.

7. We do not support new large-scale hydro projects that could have negative impacts on waterways, species, the natural environment, and surrounding communities. Each project would have to be rigorously assessed and receive consent in cases where a project is on an Indigenous territory. Given the availability and success of wind and solar technology, coupled with long-term energy storage, new hydro projects may not be needed in Ontario. Indeed, the province has investigated the potential for new hydro projects numerous times and found them to be cost prohibitive. Costs should be expected to be significantly greater today and in the years ahead. In contrast, as mentioned above, costs for wind, solar, and storage have declined significantly and are projected to continue to do so.

8. The main factor holding back new transmission lines is a lack of planning, commitment, and investment from the IESO. The government needs to immediately start building the necessary transmission lines to allow wind and solar to be used around the province and for additional hydro electricity to be imported from other

provinces (e.g. Quebec). This must be done in conjunction with municipalities, communities, and Indigenous communities where lines are on or would cross traditional territories.

9. Environmental Defence supports some of the “no-regret” recommendations such as:

a. Acquiring new non-emitting resources (not nuclear), though procurements should be expedited and not left to some future date. It is unclear why wind and solar are not being considered in the near term and why the IESO didn’t consider them “technically feasible today” when these are proven solutions when combined with existing storage technologies. The IESO’s plan to add new solar in 2029 and wind in 2030 is exceedingly late to set Ontario up for a transition to clean energy.

b. Continuing to build partnerships with the federal and municipal governments to ensure a shared alignment of energy policy. However, the federal and provincial governments are not aligned today as evidenced by the conflict between the federal government’s coming Clean Electricity Regulations and Ontario’s interest in procuring new gas-fired power. We also note that municipalities appear to be more aligned with the federal government than with the province, given the call from 34 Ontario municipalities for the province to phase out gas-fired electricity. In addition, collaboration with municipalities and Indigenous communities requires transparency on the part of the IESO, including access to detailed information, calculations, and assumptions. The IESO’s recent reports, however, have not included sufficient detail so as to be properly scrutinised by external parties.

Beyond the IESO's "no-regret" recommendations

It is disappointing that the IESO Pathways to Decarbonization (P2D) study concludes a fossil gas moratorium can only begin in 2027, after up to 1500 MW of new gas generation has been built and electricity emissions have risen.

The IESO's goal to mostly decarbonize the grid by 2050 is incredibly late, given that the province has numerous renewable options available now such as wind and solar, along with long-term battery storage which would allow the energy to be used during high demand periods.

The province could also import more hydroelectricity from Quebec, rather than ending its contract with Hydro Quebec, as it did last year. In contrast to the IESO's assessment, it is our understanding that Hydro Quebec does have excess electricity to export. Ontario may however need to sign long-term contracts to secure the extra capacity.

The government also needs to invest a lot more in energy efficiency, demand response, and DERs.

All of these measures would ensure Ontario can meet its growing energy demand while decreasing electricity emissions.

This IESO report characterizes its scenario as decreasing emissions by eight mega-tonnes (Mt) in 2035 compared with the IESO's 2021 Annual Planning Outlook (APO) projection. But the IESO's APOs and P2D are projecting emissions levels that are significantly greater than today. The IESO's 2022 APO forecasts emissions from electricity to rise to about 11 MT in 2030, and to over 19 MT in 2040 (from 6.8 MT in 2021 and 2.5 MT in 2017). That means electricity emissions will increase by over 400

per cent by 2030 and by almost 800 per cent by 2040 (compared to the 2017 level). Decreasing projections slightly from higher projections does not indicate actual decreases in emissions. Moreover, the IESO's proposal does not get Ontario closer to net zero emissions by 2035 in accordance with the coming federal Clean Electricity Regulations.

Although the IESO's plans on electricity generation are inadequate, some of its assumptions in its scenario forecasts on other natural gas use are welcome. This includes buildings which were assumed to transition from predominantly fossil-fuelled space and water heating to electric heat pumps for new residential and commercial buildings by 2035 and industry which is assumed to see a broad substitution of natural gas fuel to electricity.

In conclusion, the IESO P2D is deficient in terms of scoping out what Ontario could and should be doing to increase electricity supply without increasing the sector's emissions. It makes little sense to wean other parts of the economy off of fossil fuels, including gas, shifting them to electricity, only to increase the use of gas to generate the electricity needed to power them.

We hope the Ministry will re-assess the need for new gas generation currently being sought and choose a path that is consistent with the federal goal of having a net-zero electricity sector by 2035, while paving the way for cheaper electricity costs for ratepayers.