WCO | WIND CONCERNS ONTARIO REPORT

IESO Decarbonization Report a Pathway to Repeat Mistakes

January, 2023

The Independent Electricity System Operator or IESO released a report on December 15, 2022, titled "Pathways to Decarbonization." The document is in response to a request from Ontario's Minister of Energy to evaluate a moratorium on new natural gas power generation, and further, to "develop a pathway to zero emissions in the electricity sector."

The report is a disappointment.

While acknowledging that the electricity sector is responsible for only about 3 % of Ontario's greenhouse gas emissions, the tone of the report nevertheless suggests a climate "emergency" situation, and forges ahead with expensive plans for the future, with no accounting of costs, no evaluation of the costs for alternatives nor any assessment of value for money.

The IESO restricts its response to just two scenarios, "Moratorium" and "Pathways," to address the energy minister's request. Of the two, the pathways scenario is the more disappointing.

An excerpt:

"We…contemplated a decarbonized supply mix by 2050 with contributions from new nuclear, conservation, demand response, renewables and storage."

Focusing on the "Resource Build-out" section, we see that the IESO mentions nuclear but also relies heavily on wind power. "By 2050," the IESO report states, "as most of Ontario's existing wind facilities will have reached their end of life, this scenario also includes **an additional 17,600 MW of wind**". This represents almost three times the current wind capacity.

This is puzzling, if not shocking, given the previous experience with wind power in Ontario in which it is acknowledged that wind is an intermittent and weather-dependent source of power, and as such, not reliable.

Ontario's experience has shown that wind is a poor choice:

Intermittent Power – Wind turbines generate intermittent electricity with peak output in low demand spring/fall seasons as well as the evening period. Extended gaps in output exist in both summer and winter peak demand periods. Solar panels are similarly intermittent and cannot provide electricity in the peak winter night-time demand periods projected in the report.

Need for Substantial Back-up – Wind power needs to be backed up by alternate supply mechanisms or storage capability. Currently this is provided by natural gas generating capability which equals the amount of wind generating capacity. While intermittent renewable sources form a core part of the plan going forward, no alternatives to fossil fuel back-up are provided. Available storage capacity is projected to decrease between 2035 and 2050. Even this can only provide hours of supply, rather than the days of back-up supply that is needed.

Siting Requirements Inadequate– Siting regulations for wind turbines in the Green Energy Act did not provide sufficient protection for residents, especially for the environmental noise pollution that these projects produce. As projects expanded across rural Ontario after 2009, the problems created by wind turbines caused resistance to new projects to grow. In 2015, the government announced that they would only locate these projects in communities that were willing to host them, a statement that resulted in 115 municipalities declaring themselves "Unwilling Hosts".

Extraordinary land use – The Decarbonization Plan notes that it will require a land area equivalent in size to Toronto to meet the generation requirements using the supply mix recommended in the plan. Learning from the Green Energy Act demonstrates that this is not feasible and generating capacity that makes more efficient use of land resources is required.

Cost impact – The Green Energy Plan caused electricity costs in the province to explode. The province was forced to buy and dispose of power in periods when it was not required and to provide stand-by generating capacity for time periods when the wind resource needed by turbines was not available. The result was a loss of employment to jurisdictions with lower electricity costs and energy poverty for Ontario residents on low or fixed incomes.

Summary

No Costs–Despite noting that cost and cost-effectiveness are important, the IESO did not undertake any costing exercise for power generation sources for this report. One would have expected independent, objective, levelized costing of generation sources, together with an assessment of impact.

Artificial timelines–The 2035 timeline selected for the analysis of the moratorium scenario are artificial with no explanation why it does not align with the Ontario Power Generations timeline of 2040 to eliminate natural gas from the generation fleet.

Although nuclear is acknowledged as the clean and reliable workhorse of the largely emissions-free Ontario power system, the IESO here says "New large…nuclear facilities were not selected due to lead times that extended beyond the horizon of this scenario." This statement does not seem to align with the recently announced completion of the first Small Nuclear Reactor at Darlington in 2028 or consider the potential for earlier completion of a refurbishment of the Pickering station.

While we question the assumption that it is not possible to have new large nuclear within 13 years of this report, one has to ask: If you do an analysis and decide a particular form of

generation is the most reliable and cost-effective, and achieves your decarbonization goals, can you not envision a different timeline to accommodate that as the best solution?

Overriding public concerns? – We applaud the statements about the need to involve the public. In specific, the IESO quotes a report which concludes that public support needs "open, inclusive transparent policy, planning and approval process, engaging communities and citizens from beginning to end."

However, mere paragraphs later in its own report, the IESO says that because timing is important it will be necessary to "streamline" processes. In specific, the IESO says "it can take four to five years for new wind and solar generation" so it recommends that processes be "enhanced and streamlined." This suggestion does not seem to align with the Minister's Directive that projects receive Municipal Support which in turn requires community support. Rather than "streamlining" processes, it would be more productive to work with communities to identify problems with existing siting requirements to eliminate issues rather than developing

Destroying the Ontario advantage? – The IESO confirms repeatedly that Ontario has had the benefit of one of the cleanest power grids in the world, chiefly because of nuclear and hydro, with natural gas added to meet peak demand periods. It is astounding therefore that their view of Ontario in 2050 sees a diminished role for nuclear and a much expanded role for wind, and hydrogen which is speculative at this point.

Preferential technology – If a true cost-benefit analysis had been done for this report, the result would have been a list of the most cost-effective power generation technologies, those that would provide power that is affordable and reliable. Instead, we see evidence of preference for certain technologies, notably wind power. Energy ministers over the past 10 years in Ontario have seen the wisdom in planning that is "technology agnostic." The IESO has chosen a different path.

Conclusion

The "pathway" suggested by the IESO is very similar to the Green Energy and Green Economy Act in Ontario, which was a disaster in every way that matters: promised economic benefits did not materialize; electricity bills multiplied by a factor of more than two, introducing the term "energy poverty" to Ontario; and wind power has not contributed significantly either to climate change mitigation nor to a stable, affordable power supply.

To conclude, it is our view that this report has failed to respond to the Minister of Energy, and failed to offer a reasonable, affordable and workable solution to the need to meet Ontario's long-term electrical power requirements.

Ottawa, 2023