Feedback Form

Gas Phase-Out Impact Assessment – May 27, 2021

Feedback Provided by:

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To promote transparency, feedback submitted will be posted on the Gas Phase-Out Impact Assessment webpage unless otherwise requested by the sender.

Please provide feedback by June 17, 2021 to engagement@ieso.ca. Please use subject:

Feedback - Gas Phase-Out Impact Assessment

Questions

Topic	Feedback
Carbon Tax	Assessments and scenarios incorporate Federal carbon pricing as announced in December 2020.
Baseline Scenarios	Scenarios should consider the market transition for fuel switching, renewable energy generation and storage required for the electrification of existing buildings and transportation in addition to forecasted load growth from low-carbon (electrified) new development, electric vehicles and public transit systems between now and 2040. Analysis should also take into account the avoided costs of investing in fossil-fuel based infrastructure, which will need to be decommissioned in order to meet domestic and international climate mandates. Additionally, the assessment should integrate increased revenue generation from expansion and business development while accounting for daily/seasonal demand profiles stabilization which reduces the per unit cost of electricity. It is important to note, although "Ontario's power grid represents roughly three per cent of our province's greenhouse gas emissions", the electrification of transportation and buildings – signalled by Canada first tiered National Model Building Codes (December 2021), Toronto Green Standard (active), Toronto's Net-Zero Existing Buildings Strategy (July 2021) - will shift fuel source demands from hydrocarbons to electricity. These market transformations should be accounted for in the assessment. We recommend the Assessment include multiple gas phase-out scenarios, with interim benchmarks for reducing fossil gas use prior to the phase-out. Aligning Ontario's natural gas phase-out with the United States and the IEA's phase-out timelines set for 2035 should be considered as a scenario. We recommend adjusting the scope of the study (as outlined on slide 26 of IESO's engagement presentation) to consider and compare the emissions reductions, costs, and other impacts that would result from multiple phase-out scenarios, for example: • Complete phase-out of gas by 2030; • Complete phase-out of gas by 2035, with a 50% reduction in gas generation emissions by 2030; • Complete phase-out of gas by 2040, with reductions of 25% by 2030 and 50% by 2035 in gas generation emissions.
Technical Inputs: Viability & Considerations	Ensure scenarios explore the potential to construct new generation & storage using all available renewable and low-carbon technologies, including centralized and distributed technologies, as well as designs that allow curtailment of generation.

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	High-level assessment of transmission system upgrades required for reliable connection of renewable generation and storage supply so that local/regional gas generation is no longer required. High-level assessment of distribution system upgrades required for net zero buildings and connection of distributed renewable generation/storage. Ensure system upgrade assessments include sufficient electricity system resiliency to mitigate risk as increased reliance is placed on our electricity system as our economy moves off fossil fuels. The City of Toronto recognizes that replacing local gas generation in the GTA would require land on which to build alternate generation or new transmission infrastructure. The gas phase out assessment should include high-level assessment of these requirements and costs. Renewable natural gas (RNG): The Ontario Energy Board has already assessed the achievable potential[1] of RNG as approximately 2.5% of the current consumption of natural gas in Ontario. While RNG may be useful in high temperature industrial processes, it should not be considered a core part of the solution for Ontario's electricity system. Similarly, hydrogen is not in a position to displace gas generation, as the production of clean "green" hydrogen requires electricity. Carbon capture technologies may justify the continued operation of some gas plants in order to meet end-of-life or emergency scenarios. Although carbon capture and storage technologies have short-term emission offsets, capital investment, operating & maintenance costs and end-of-life valuations need to be incorporated.
Comprehensive Emission Factors	The City of Toronto believes the assessment of the emissions associated with imported and exported power is critical to the success of this analysis. For example, the Lake Erie Connector project will interconnect with an electricity system with an average emissions factor 10x higher than Ontario's system – substantial imports from this system would have negative social and environmental impacts on Ontarians. This assessment should focus on limiting potential electricity import solutions to clean electricity only, along with a means to assess the impact and emission factors of integrated energy systems.
Scenario Sensitivities	The physical climate change scenarios of more frequent extreme weather should include a 2 degree Celsius extent of warming as well as the worst-

[1] ICF. (2017). Marginal Abatement Cost Curve for Assessment of Natural Gas Utilities' Cap and Trade Activities (EB-2016-0359). https://www.oeb.ca/sites/default/files/OEB_MACC Report_20170720.pdf (see page 47 for Ontario's RNG potential)

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	case climate scenario known as RCP 8.5 per the Intergovernmental Panel on Climate Change. The Canadian Electricity Association's "Guide to Adaptation Planning for Electricity Companies in Canada" (May 2021) could guide climate risk considerations. The City of Toronto recommends consideration be given to the extreme weather impacts on the system in the context of phasing out natural gas, and be informed by the work that is in progress to conduct a climate change risk assessment for all major sectors in the Province of Ontario. This work is being co-ordinated by Mr. Al Douglas, President of the Climate Risk Institute. Mr. Douglas is reachable at Al Douglas al.douglas@climateriskinstitute.ca. Further insights on climate risk assessment for the electrical system in Ontario may be available through Dr. Joerg Wittenbrinck (Manager, Strategic Policy and Research at Ontario Ministry of Energy).
Co-Benefits: Economic Development & Vulnerability	The assessment should include job creation and economic benefits resulting from new generation and transmission/distribution system upgrades/expansion. Toronto is more vulnerable to electrical system failure because a majority of electricity comes through only two main electrical transformer stations: Mamby (west) and Leaside (east). Compared to other large North American cities, Toronto is more constrained for new incoming electrical transmission lines in part due to the presence of Lake Ontario on our southern boundary, similar to other large cities such as Chicago, Boston, NYC and others. Toronto has particular concerns about the growing and aging population living in high-rise buildings. High-rise buildings tend to be less able to support reasonably comfortable habitation compared to low-rise residential buildings, particularly during periods of extreme weather. In the event of an extended multi-day power disruption during a heat wave, many buildings could become un-inhabitable for vulnerable residents with existing health challenges.
Accountability: Disclosure and Reporting	On a go forward basis, electrical companies are encouraged to publicly report according to the Guidelines of the Task for on Climate Related Financial Disclosure (TCFD). Toronto is one of the lead cities pursuing this disclosure to ensure decision-makers are equipped with pertinent information. It will also help evaluate the financial health of the companies relative to the major risk factor posed by climate change.
Legal Consideration	Distribution utilities have legal exposure and can be held liable in the event of damages to electrical customers experiencing major losses resulting from extended power disruptions that could have been reasonably foreseen and

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	avoidable with sufficient climate adaptation action. As municipalities may be the "financial backstop" to their local distribution utility, there is question whether a municipality such as Toronto could have financial risk exposure as a result of insufficient action to adapt to climate change.

General Comments/Feedback

The World Economic Forum continues to rate climate action failure, biodiversity loss, environmental damage, natural resources crises, extreme weather as global top threats (accumulatively worse than infectious disease – see Figure 1 below).

Ontario's phase out of coal highlights why transition off gas generation must start now. Comprehensive planning will allow the IESO to proactively address expiring gas generation contracts.

Terry Young's letter in February 2021 to Council identifies that IESO "is responsible for planning for future needs, ensuring that tomorrow's system can be operated reliably at lowest cost to Ontarians." As the Provincial government moves to add greenhouse gas reduction planning to IESO and OEB mandates, stakeholders such as the IESO and policy-makers would be best served to pre-emptively consider an impact assessment on potential GHG reduction targets with multiple phase-out dates. This should reflect benefits of GHG emission reductions and costs of emissions to Ontarians including, but not limited to, expected impacts on health, resilience to future extreme weather associated with different future climate scenarios, electrification, etc.

A holistic, future-proofing analysis is required to integrate social, economic and environmental impact considerations into the gas-phase out assessment.

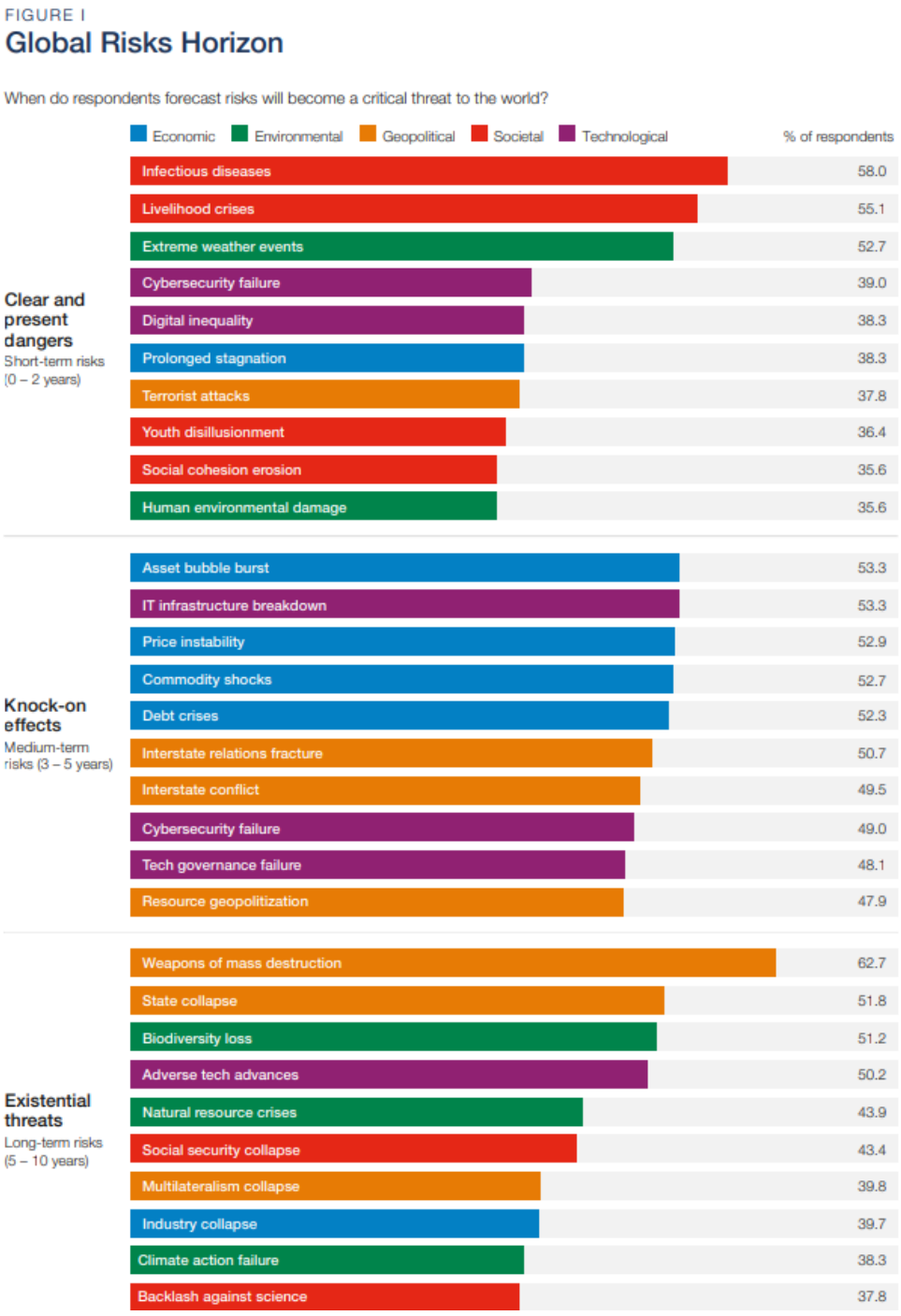

Figure 1: World Economic Forum Global Risks Perception Survey 2020