Atura Power

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Consultation to support the important role for natural gas in Ontario's energy system and economy

Atura is providing feedback on the long-term role of natural gas in Ontario. While the electricity sector, as well as others (heavy industry), work to decarbonize, natural gas will continue to play a pivotal role in reliability and affordability when it comes to Ontario's electricity sector.

While the electricity sector continues to add more low-emitting resources such as SMRs, large nuclear, hydroelectric, hydrogen, wind, solar and batteries there continues to be a need for natural gas generation in Ontario.

Questions:

1. *What principles should the government provide to the OEB to help inform the Board's ongoing development of natural gas connection policies?*

Natural gas is a critical component of the economy and it is important to ensure that new natural gas connections can continue to be economically feasible.

OEB should continue to allow natural gas distributors and transmitters to spread connection costs for new customers across rate base and maintain sufficient revenue horizon to ensure rates and connection costs can continue to be cost-effective.

2. *What role should natural gas play in supporting energy affordability and customer choice in residential and small commercial applications (e.g., space and water heating)?*

No response.

3. *What role should natural gas play in supporting economic development in Ontario's industrial and agricultural sectors, including those processes that may be difficult to electrify?*

Ontario is experiencing economic growth driven by a surge in interest in investments into industrial and commercial sectors. These investments are driven by a desire to connect to Ontario's clean, reliable, and affordable electricity system. Additional natural gas-based electricity generation resources are required to accommodate these rapidly increasing demands. Natural gas generation is the only technology that can built in the timeframe needed to ensure the electricity system can continue to be reliably operated 24/7 regardless of weather conditions at an affordable cost.

4. *What role should the government play in supporting and expediting the rational expansion of the natural gas system to make home heating more affordable and support economic growth in communities that are seeking natural gas service?*

No response.

5. *For natural gas expansion projects receiving government support, should the approvals processes be streamlined to support affordable home heating for Ontarians? In what ways?*

No response.

6. *What role should natural gas play in supporting power system security and resiliency?*

Natural gas power plants maintain the reliability of power systems by supplying electricity when other sources of electricity are not available. Natural gas is uniquely suited to this role due to its ability to be cost effectively stored underground in very large quantities and sent to power plants through an underground pipeline system on demand as required. Ontario's natural gas storage capacity is nearly equal to the total annual electricity production.

Natural gas power plants are versatile resources that shift roles as needed. Over the last several years, as Ontario's economic growth has increased electricity demand, natural gas power plants have supported this growth by increasing their electricity production. As Ontario adds more non-emitting generation resources (e.g. Nuclear, Hydroelectric, Wind, Solar, etc.), natural gas power plants will operate less frequently, mainly during times of very high electricity demand or during weather conditions that prevent wind and solar facilities from operating.

The energy density of natural gas power plants allows them to be sited in urban areas and supply power where it is needed. For example, the Portlands Energy Centre plays a critical role in maintaining the reliability of the Toronto city centre by supplying 12% of peak demand that cannot be served by existing transmission facilities and jumpstarting the city's electricity supply in the event of a wide scale power outage. Without these types of facilities, extensive transmission system upgrades would be required across the Province, as well as replacement facilities to provide the power formerly provided by natural gas generation.

There is currently no cost-effective technology for replacing the role natural gas power plants play in maintaining electricity system reliability. Consequently, natural gas power plants will remain an essential part of electric power systems for the foreseeable future.

The pace of decarbonization of the electricity system must occur in step with other sectors. As Ontario has already demonstrated, it is very achievable to get to an electricity sector that is more than 90% emission free through a combination of mostly non-emitting resources, supported by natural gas.

7. What role should natural gas play in offsetting higher GHG-emitting fuel sources?

Electrification is widely accepted as the primary pathway for broad decarbonization. A reliable and affordable electricity grid is a pre-requisite for enabling this shift. Natural gas-powered electricity generation plays a critical role in ensuring the electricity grid can continue to be reliable and affordable and continue to be the main driver in reducing Ontario's overall GHG emissions.

A significant opportunity for electrification exists within the transportation sector (i.e. gasoline and diesel fueled vehicles), which represents the highest source of GHG emissions in Ontario. The conversion of these vehicles to electricity, either directly via battery powered vehicles, or indirectly through hydrogen powered vehicles (with hydrogen supplied via electrolysis), represents the most feasible way to substantially reduce Ontario's GHG emissions in the near term.

A gasoline-fueled car produces more than 35 times the emissions of an electric vehicle charged from the Ontario grid. Even if an electric vehicle was charged solely from a combined cycle natural gas power plant, overall emissions would be reduced by 60%.[1]

Many opportunities for decarbonization of heavy industry via electrification also exist, for example, moving from coal to electric arc furnaces in the steelmaking industry.

8. *What are the challenges and opportunities for enhanced energy efficiency, adoption of clean fuels (e.g., RNG, hydrogen) and emission reduction methods (e.g., carbon capture and storage) to lower emissions in the natural gas system?*

Focusing on the adoption of clean fuels, the opportunities represented via hydrogen are direct emissions reductions within the natural gas system. Most standard appliances are capable of tolerating a hydrogen blend and natural gas itself is easily able to accommodate blended fuels which provides a direct opportunity for this emissions reduction and climate goal alignment opportunity. Hydrogen can be blended gradually while maintaining the reliability of Ontario's natural gas system.

From a challenges perspective, the clean hydrogen adoption market has not advanced at the pace expected, especially as it relates to the demand side. Opportunities exist for either mandates or consumer driven choices to decarbonize their own energy supply, should clean hydrogen be included within the natura gas system. It's recommended that a clean fuel blending standard (or mandate) be set which will support reduction of emissions for home heating and existing power generation and will also incite economic advancement and activity as it relates to the production of the clean fuels (i.e., hydrogen) which will continue to drive down the costs. Additionally, an opportunity for consumers to elect to procure clean fuels within the natural gas system (i.e., environmental attribute transaction) would promote additional production, increasing the scale of the production opportunity and expectantly lowering the levelized cost of hydrogen production.

Recommendation: Future natural gas infrastructure and end use applications should largely be designed and constructed in a manner that permits hydrogen blending (e.g., "hydrogen ready infrastructure") which will lower future costs for blending opportunities as it would reduce engineering assessments and potential modification and/or reconstruction of natural gas system infrastructure.

[1] Decarbonization and Ontario's Electricity System, IESO, October 7, 2021, https://ieso.ca/en/Learn/The-Evolving-Grid/Natural-Gas-Phase-Out-Study