

June 16, 2021

Submitted online to engagement@ieso.ca

RE: Gas Phase-Out Impact Assessment

The Ontario Society of Professional Engineers (OSPE) is the advocacy body and voice of the engineering profession. Ontario currently has more than 85,000 professional engineers, 250,000 engineering graduates, 6,600 engineering post-graduate students and 37,000 engineering undergraduate students.

OSPE is supportive of the goal that long-term energy planning in the province is to ensure reliable, cost effective, affordable, and sustainable energy systems. This is critical to guarantee affordable energy prices to all end users, ensure the competitiveness of industrial and commercial customers and foster a healthy provincial economy, that protects the environment and enables the province to meet its targets for greenhouse gas emissions and conservation. To fully achieve this, a long-term approach with the entire economy must be considered.

For the Gas Phase-out Impact Assessment (GPIA), OSPE recommends that the scope of the assessment be extended beyond 2030 to at least 2040. This will enable the impact of clean technologies planned to become commercially and economically available beyond 2030 to be taken into account in the assessment. The installation and implementation of these clean technologies will ensure that the Provincial Power System (PPS) can continue to be clean, reliable, resilient, cost effective and affordable. It is important that the assessment recognizes the planned commercial availability of Small Modular Reactors (SMRs) and Hydrogen Technologies by 2030. The development of these clean energy options has the support of the Federal and Provincial Governments in the form of funding, strategies, and road maps for SMRs and the Hydrogen economy.

Additional clean technologies may also come to achieve commercial maturity in this time period. Even if those new technologies fail to become commercialized, Ontario has available CANDU reactor technology which can be deployed in the 2030-40 period, to reduce emissions from gas-fired plants and to accommodate any additional base-load demand.

The many services that the gas plants provide to the PPS to ensure reliability and resiliency at low cost (slides 11, 12 & 13 of the IESO GPIA Presentation) will continue to be needed beyond 2030. The gas plants are valuable existing assets, and they are likely to continue to be the most reliable and lowest cost option to provide these services. The availability of new clean technologies will enable the gas plants to provide the reliability and resiliency services while minimizing their use and emissions.

The IESO's presentation did not highlight some important technical requirements that the gas-fired plants provide that are especially critical during Ontario's winter weather. Distributed gas-fired plants are well suited to offset risks of a severe winter storm. These risks include the ability to support frequency and voltage control during system restoration, the ability to provide local island operation following damage to a major transmission corridor, and the ability to provide

dependable energy and unlimited operation during a prolonged loss of wind, sun or transmission connection. OSPE recommends that these requirements be included in the IESO GPIA.

Regarding provincial emission targets, the scope of the assessment must consider the total emissions from all sources in the province. Gas plants are only a fraction of provincial emissions and the potential for reductions in emissions in other sectors such as transportation, industry, and buildings is far greater at lower costs. We should work towards electrifying these sectors, and gas plants will enable this to be done reliably at a lower cost.

It is also important to differentiate between baseload and peak load demand. Baseload can be provided at low cost using low-emission dependable base-load sources which do not require support from more expensive energy storage. Making clean surplus electricity available at its low marginal cost of production to other sectors for fossil fuel displacement can be a part of an emission reduction strategy.

In all 3 scenarios (Slide 26) it is important to include aggressive low-cost demand side programs such as Energy Efficiency, Conservation and Demand Management. Reducing peak and energy demands is one of the lowest cost ways to reduce emissions and transmission and distribution losses.

Also, in all three scenarios it is important to apply realistic estimates of the time to obtain approvals for new generation sites and transmission right of ways. This may be critical for the feasibility to install large-scale clean supply and energy storage options to replace the gas-fired plants during the current decade, particularly so in the case of scenario 1.

It is recommended that the 3 scenarios be studied for the upper demand forecast (faster recovery from pandemic) and lower demand forecast (slower recovery from pandemic). In the past the IESO has tended to over-estimate load growth in the face of rising electricity prices. Since intermittent low-emission electricity plus energy storage is more expensive than higher-emission electricity, prices for electricity will rise if gas-fired plants are eliminated. The more likely demand forecast in a rising electricity price environment is flat to down. This suggests the IESO should add a flat load demand scenario if it discovers that any of the technical solutions to eliminate the gas-fired plants result in higher electricity prices.

We look forward to receiving the assessment report later this year and working with you to further develop these recommendations. If you have any additional questions, please contact Stuart Atkinson, OSPE Policy and Government Relations Lead, at satkinson@ospe.on.ca.

Sincerely,



Mark Frayne, P.Eng.
President & Chair
Ontario Society of Professional Engineers



Sandro Perruzza
Chief Executive Officer
Ontario Society of Professional Engineers