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May 14, 2023

The Hon. Todd Smith
Ministry of Energy
77 Grenville St., 7th Floor
Toronto, ON
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RE: ERO Posting 019-6647 – IESO PATHWAYS TO DECARBONIZATION FEEDBACK

Dear Minister Smith,

Invenergy welcomes the opportunity to contribute and provide feedback to the Independent Electricity System Operator's Pathways to Decarbonization report. We are at a pivotal moment in the energy sector transition, and just like when Premier Ernie Eves started the transition off coal, Ontario has the opportunity to once again be a leader in the global energy shift. Invenergy believes a successful approach will be one that is pragmatic and balances costs for ratepayers, the environment, and grid reliability. Supporting the continued operation of natural gas is not contrary to the development of more renewable energy, in fact one is necessary for the other.

Invenergy is a leading privately held, global developer and operator of sustainable energy solutions. With over 31 GW developed internationally, we have commissioned 1,071 MW in Canada to date. We have completed 9 projects including wind, solar and high efficiency natural gas with an over 4 GW project pipeline spanning wind, solar, energy storage, and natural gas in seven different provinces.

Our natural gas fired St Clair Energy Centre plays a vital role in Ontario's grid, contributing to reliability and providing affordable power. In addition to supporting the continued operation of this facility, Invenergy is keen to play a role in Ontario's energy transition as demand increases due to electrification and the potential decommissioning of the Pickering Nuclear Station. With a business-friendly environment, competitive procurements, and long-term certainty, we can continue to expand in Ontario, bringing our expertise that have been executed in the United States and internationally. Strong direction from the government will provide us with the long-term certainty we need to make investment decisions in the province.

Thank you again for the opportunity to take part in this consultation. Please see below for our comments on the Pathways to Decarbonization Study questions.

Best,

Patrick Beatty
Director, Canadian Affairs and Global Policy
Invenergy

The Ministry of Energy is seeking feedback on the report and, in particular, the IESO's "no-regret" recommendations. We are particularly interested in comments and responses on the following questions:

- 1. The IESO's Pathways Study recommends streamlining regulatory, approval and permitting processes, citing that it can take five to 10 years to site new clean generation and transmission infrastructure.***

What are your thoughts on the appropriate regulatory requirements to achieve accelerated infrastructure buildout? Do you have specific ideas on how to streamline these processes?

Invenergy views the recommendation to streamline regulatory, approvals and permitting processes as a much-needed step to achieve the buildout of renewables under the timelines required. Generally, Ontario has been making progress on this front over the last few years. Going forward, the primary focus should be on ensuring staffing levels are sufficient to address compressed review timelines for electricity projects considered to be of particular importance to the province.

As a company already operating in the IESO Administered Market (IAM), we believe the Request for Qualifications (RFQ) process should be streamlined to facilitate more bids and to promote a more competitive process. It does not make sense to require companies already operating in the market to go through an RFQ process. By eliminating this additional red tape, it would save time for already operating proponents to focus on other aspects of their bid such as enhanced consultation requirements. This approach will save Ontarian ratepayers money over the longer term by ensuring that all potential projects are considered by the IESO.

- 2. The IESO's Pathways Study recommends beginning work on planning and siting for new resources like new long-lived energy storage (e.g., pump storage), nuclear generation and waterpower facilities.***

What are your expectations for early engagement and public or Indigenous consultations regarding the planning and siting of new generation and storage facilities?

Siting large scale generation continues to be a hurdle in the development process. By providing a long-term plan to the market, developers can start siting generation and foster relationships with the local communities and Indigenous groups.

If the government provides clarity on where generation is needed and where large transmission will be built this will help Invenergy site and plan for the future. Developers need to make decisions weighing where we should invest and divert our resources given the growing international energy need. The more certainty and information Ontario provides the more we have to offer the province. Other jurisdictions have regular and frequent procurements so developers can be ready to build; this helps with providing affordable power and meeting deadlines ensuring supply is available for when there is demand.

The government should consider New South Wales' Renewable Energy Zones. There the state government designated particular areas that had welcoming communities, good resources and worked from a permitting perspective. The government then mandated renewable developers to site within those zones. Each zone has large storage projects and new transmission projects planned to integrate the renewables at low costs.

- 3. The IESO's Pathways Study shows that natural gas-fired generation will need to continue to play an important role in the system for reliability in the short to medium term. The IESO's assessment shows that most of the projected Ontario demand in 2035 can be met with the build out of non-emitting sources, but some natural gas will still be required to address local needs and provide the services necessary to operate the system reliably.***

Do you believe additional investment in clean energy resources should be made in the short term to reduce the energy production of natural gas plants, even if this will increase costs to the electricity system and ratepayers? What are your expectations for the total cost of energy to customers (i.e., electricity and other fuels) as a result of electrification and fuel switching?

Invenergy supports the continued operation of natural gas as it is essential for reliability. Natural gas also helps enable new renewable development providing back up during unforeseen weather conditions. There are ways Invenergy and other gas operators can play a part in the transition to net zero including clean fuel blending and carbon capture. However, these emerging technologies are still in a nascent phase so it is crucial the incentives exist to support their use in Ontario. The Ontario government should be working with the federal government to ensure Investment Tax Credit (ITC) benefits for Carbon Capture and Storage (CCS) exist in Ontario and that the Canada Infrastructure Bank (CIB) continues to work collaboratively on making the business case work for innovative natural gas plant upgrades that will be key pieces of Ontario's clean energy transition.

- 4. The IESO's Pathways Study highlights emerging investment needs in new electricity infrastructure due to increasing electricity demand over the outlook of the study. The IESO pathway assessment illustrates a system designed to meet projected demand peaks almost three times the size of today by 2050, at an estimated capital cost of \$375 billion to \$425 billion, in addition to the current system and committed procurements. Please see supporting materials for illustrative charts on capacity factor and cost by resource type.***

Are you concerned with potential cost impacts associated with the investments needed? Do you have any specific ideas on how to reduce costs of new clean electricity infrastructure?

Wind and solar generation have become increasingly more affordable. The Ontario government needs to support large scale renewables through streamlining approval processes and getting transmission built so generators can build in willing communities and move that power to areas of higher need. A pragmatic approach can help balance costs and sustainability goals by keeping natural gas online, expanding where needed and adding new clean generation.

Right now, the federal government has committed to major investments in clean technology, Ontario has the opportunity to once again be a leader in the clean energy space and keep costs low for ratepayers by procuring technology that can receive federal support.

In addition, cutting red tape and allowing for corporate Power Purchase Agreements (PPA) can allow for more competition and reduce costs. As we see in Alberta this has supported their renewable boom and has become a very attractive market for investors. Studies have shown this is proven to reduce system costs and encourages the private sector to contribute to net zero goals.

- 5. The IESO's Pathways Study recommends that for a zero-emissions grid by 2050, investment and innovation in hydrogen (or other low-carbon fuels) capacity could be required to replace the flexibility that natural gas currently provides the electricity system.***

Do you have any comments or concerns regarding the development and adoption of hydrogen or other low-carbon fuels for use in electricity generation? What are your thoughts on balancing the need for investments in these emerging technologies and potential cost increases for electricity consumers?

In order to minimize rate increases, significant investments and incentives for clean, dispatchable power, fuels, and technologies are required. These solutions include hydrogen, Renewable Natural Gas (RNG), carbon capture & sequestration, and long duration energy storage. Support for these emerging technologies could include an expansion of the IESO's Hydrogen Innovation Fund and advocating for federal supports like the CCS ITC to be available in Ontario.

- 6. The IESO's Pathways Study recommends greater investment in new non-emitting supply, including energy efficiency programs.***

Following the end of the current 2021-2024 energy efficiency framework how could energy efficiency programs be enhanced to help meet electricity system needs and how should this programming be targeted to better address changing system needs as Ontario's demand forecast and electrification levels grow?

Invenergy supports seeking the best solutions that provide value for ratepayers.

- 7. The IESO's Pathways Study includes a scenario for over 650 MW of new large hydroelectric capacity to meet system needs in 2050.***

A recently released assessment estimates that there may be potential to develop 3,000 to 4,000 megawatts of new hydroelectric generation capacity in northern Ontario and 1,000 megawatts in southern Ontario.

What are your thoughts on the potential for development of new hydroelectric generation in Ontario by private-, Indigenous- and government-owned developers?

While the capital costs for hydroelectric generation may be higher than nuclear, wind, solar, and natural gas, do you support investing in large scale hydroelectric assets that may operate for over a hundred years?

Invenergy does not build hydroelectric generation although if the province wishes to pursue large scale hydroelectric projects it should be proven that it is because that it is best for ratepayers from a time and cost perspective compared against other resources.

Renewables have continually proven to be able to compete in business-friendly environments like Texas. Invenergy built the largest solar development in the US in Texas which included corporate power purchase agreements with private companies and municipalities. Cutting red tape and paving the way for the free market to step up could reduce the burden on government and the ratepayer.

In addition, if the government does pursue hydro in northern Ontario, the transmission built should consider the interest in using that flexibility to build new wind or solar generation in Northern Ontario to provide for areas of constraint across the province.

- 8. The IESO's Pathways Study suggest that significant transmission capacity will be needed to help balance intermittent sources of electricity (e.g., wind and solar) and to ensure cost-effective supply can be delivered to meet growing demands from electrification and economic growth.***

Transmission will also be required to balance intermittent supply with dispatchable supply (such as natural gas and energy storage) and meet demand in regions with retiring assets.

What steps should be taken to ensure that transmission corridors can be preserved and lines can be built as quickly and cost effectively as possible?

Ontario should open the door for more competition in building new transmission. The limited participation in Ontario transmission development is not sustainable given the amount of infrastructure needed to be built. A competitive process needs to be created that works for investors and provides the best deal for ratepayers.

Additionally, if Ontario wants to cut down on transmission costs, they should be creating market mechanisms that allow non-wires alternatives like storage to play in transmission markets and generation markets.