



**SOCIETY *of*
UNITED PROFESSIONALS**
IFPTE 160

May 12, 2023

Re: IESO Pathways to Decarbonization Study

The Society of United Professionals represents over 9,000 engineers, scientists, supervisors, and other professionals in Canada's energy and legal sectors. As an organization, we have represented professionals for over 70 years.

The Society represents employees working for a dozen different employers in the electricity sector, including Ontario Power Generation, Bruce Power, Nuclear Waste Management Organization, Hydro One, the Independent Electricity System Operator, the Ontario Energy Board, Toronto Hydro, Kinectrics, and the Electrical Safety Authority.

Our members work in every aspect of the electricity industry. They are involved in generation, transmission and distribution of electricity, management of the electricity system, regulation and enforcement of standards, and management of the electricity market. They are employed as first-line managers and supervisors, professional engineers, scientists, information systems professionals, economists, auditors and accountants, as well as many other professional, administrative, and associated occupations.

The Society's members are knowledge workers who take great pride in exercising their civic, social, and professional responsibilities. As a union, we stand behind our members' professionalism, integrity, and commitment to excellence in all areas, particularly workplace safety, public health, and environmental sustainability.

The Society considers the electrification of our economy and the expansion of non-emitting electricity generation to be a necessary condition in the fight against climate change. We are grateful for the opportunity to consult on the IESO Pathways to Decarbonization Study, please find below our response to the consultation questions put forward by the Ministry of Energy.

Sincerely,

Michelle Johnston
President
The Society of United Professionals



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?

Ontario's electricity grid needs to ensure three important standards as we shift towards an electrified future: reliability, minimal carbon emissions, and safety are necessary conditions to ensure public confidence and gain the social license necessary for an infrastructure build out of the scale necessary.

The Society believes that to maintain these standards, our regulatory regime must be both thorough and timely. This will require our regulatory agencies to be adequately staffed and resourced.

There are likely opportunities to make our regulatory bodies more efficient, and we should explore every possible avenue to increase efficiency of regulatory reviews in order to ensure a timely process. We need to act now and expedite the process of building the zero-emission power necessary to combat climate change, but we must ensure safety and reliability are not compromised.

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?

The Society believes work on the zero-emission generating assets needed to power the electrification of the economy needs to begin as soon as possible, and that includes meaningful consultation with all relevant stakeholders, especially Indigenous communities and labour.

This is an opportunity to not only direct public funds towards the generation of clean electricity, but also to engage in a large scale public infrastructure buildout that will strengthen communities, build a sustainable economy, and support a just transition for workers into the clean economy. This will require meaningful consultation with stakeholders to ensure we are maximizing the utility of public funds in a way that is best for our environment, our communities, and our economy.

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?

The Society believes that decarbonizing the province's economy, across all sectors, is of paramount importance in the fight against climate change. Fortunately, Ontario's current supply mix is one of the greenest in the world, and in the short-run we can make significant net reductions in carbon emissions by focusing on increased electrification in sectors like transportation and buildings, while building the zero-emission electricity infrastructure in the longer term. Natural gas currently plays an important role in system reliability, however we should seek to minimize its use whenever we can. To that end, additional short-term investment in clean energy would be beneficial, however the primary focus should be on long-term, large scale zero emission projects like new nuclear.

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?

The Society is more concerned with the potential costs associated with not taking adequate action to electrify all aspects of our economy to combat climate change. That said, we understand that without public support, the large scale investments needed to reach net-zero will be difficult to implement. Downloading all or the majority of the cost of these investments to ratepayers may lead to public backlash against the plan. This is as much climate policy as it is electricity policy, and as such a significant portion of the investments should be funded by the tax base, and tax-supported debt issuances like green bonds.

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?



All zero-emission options should be on the table, and considered on a case by case basis. The primary concern with fuels like hydrogen is the energy input required to produce the fuel. Any consideration of the processing of low-carbon fuels should fully weigh the full life-cycle emissions of the fuel source.

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?

Electrification of the province's economy is going to lead to a drastic shift in current time of use profiles, both in terms of seasonal demand, as well as daily demand. Demand response programs and more effective time of use pricing which accounts for the changing demand profile should be considered.

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?

Yes, the Society supports expanding all forms of zero-emission energy that can help the province meet the electricity demands of electrification. Currently, only large scale nuclear and hydroelectric power can provide the reliable baseload power necessary, without carbon emissions. If viable sites can be identified to host large scale hydroelectric generating stations, and the process includes meaningful Indigenous consultation and Indigenous ownership, the Society would support the development.

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?

Society members work in all aspects of the electricity system, including transmission. The most efficient and cost effective way to expand transmission capacity will be to ensure those that have successfully managed our transmission assets for decades are given the resources needed to expand transmission capacity to meet the demands for electrification.

9. *Do you have any additional feedback on the IESO's "no-regret" recommendations?*

When we consider the catastrophic threat posed by climate change, there is simply no acceptable path forward other than a "no-regret" option. As we approach 2050, we simply cannot afford to make decisions now that will lead to regret in the future, as that will mean we did not do all we could to prevent the oncoming devastation caused by climate change. Failure here will have terrible repercussions on the lives and livelihoods of countless people. We have a moral imperative to do everything necessary to alter our current path, and as such a "no-regrets" approach is the only approach we should consider.