

ONTARIO ENERGY ASSOCIATION

NRCAN ONTARIO REGIONAL ENERGY AND RESOURCE TABLE

OEA SUBMISSION

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To shape our energy future for a stronger Ontario.



Ontario Energy Association

ABOUT

The Ontario Energy Association (OEA) is the credible and trusted voice of the energy sector. We earn our reputation by being an integral and influential part of energy policy development and decision making in Ontario. We represent Ontario's energy leaders that span the full diversity of the energy industry.

OEA takes a grassroots approach to policy development by combining thorough evidence based research with executive interviews and member polling. This unique approach ensures our policies are not only grounded in rigorous research, but represent the views of the majority of our members. This sound policy foundation allows us to advocate directly with government decision makers to tackle issues of strategic importance to our members.

Together, we are working to build a stronger energy future for Ontario.

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INTRODUCTION

As we work together towards a clean grid that provides reliable and affordable electricity to support electrification for a decarbonized economy, the OEA is pleased to have this opportunity to provide our comments to Natural Resources Canada's Ontario Regional Energy and Resource Table.

We are at a pivotal point for the province's electricity system that requires the establishment of clear roles and responsibilities for the federal and provincial governments to work together in an economy-wide transition related to electrification, green jobs to support electrification, as well as deployment of hydrogen and renewable natural gas (RNG) as we simultaneously work to decarbonize the economy and Canadian gas sector. Federal and provincial governments should work together and ultimately publicly outline their mandates for doing so. While the federal government maintains the role of setting economy-wide decarbonization goals, it should hold provinces accountable for overall economy achievement. And while there is need for a provincial lead on provincial energy system policy, we believe provincial flexibility is the best model under the larger goal of economy-wide achievement, and that the province is best suited to optimize its performance under this method.

Support from the federal government by way of both financial incentives and policy frameworks will be important mechanisms as Ontario transitions. Support is useful to encourage the adoption of more clean electrification technologies such as Distributed Energy Resources (DERS) and the significant upgrades and expenditures required for the transmission and distribution systems to balance the growth in anticipated demand. The issue of cost (conservatively assessed at half a trillion dollars for Ontario until 2050 in Independent Electricity System Ontario's *Pathways to Decarbonization* Paper) is one that cannot be sidestepped. In addition, OEA believes hydrogen along with RNG represents a significant opportunity as we work to decarbonize elements of the economy and Canada's gas industry. Financial support would further aid in safely deploying hydrogen and renewable natural gas for residential end-use and decarbonizing electricity generation in Ontario.

ELECTRIFICATION:

Decarbonisation and the energy transition are essential activities that needs to happen if Ontario wants to attract and retain businesses who demand clean energy options and do its part in meeting climate change targets. Electrification and decarbonization are not necessarily the same thing, but have overlapping footprints in the policy, regulatory and technological spheres. Economy-wide decarbonization is the over-arching objective, with electrification playing a leading role. Demand-Side Management/Conservation and Demand Management (DSM/CDM), Energy Efficiency (EE), Carbon Capture and Storage, Alternative Fuels (e.g. Renewable Natural Gas, Ammonia and Hydrogen) etc., all have complementary non-electrification roles to play towards decarbonization. It is imperative that current energy systems are evaluated and their benefits leveraged as energy transition unfolds. All energy sources must be factored into a holistic approach to energy transition as each energy system has a complementary role to play.

As a general principle, the OEA's positions are built on a "technology neutral" basis. Regulatory frameworks, tax treatments, roles and responsibilities, business models, planning enablement etc., have a critical role to play in supporting the transition. The OEA recommends that the Ontario

Energy and Resources Table (“the Table”) focus on an “outcome-based” approach rather than trying to predetermine technological winners and losers.

Over the longer-term decarbonisation will likely have to happen in an iterative manner as grid-edge technologies/clean technologies are developed and implemented. Success will depend not just on the ability of technology to be deployed, but also on its ability to be deployed at scale, with supporting regulatory frameworks. Business models, regulations and legal frameworks will have to evolve.

For example, utilities must invest now to modernize their distribution systems to connect and integrate Distributed Energy Resources (DER), increase grid resiliency and evolve Distribution System Operator (DSO) capabilities to allow individual customers to participate in and benefit from the energy transition. Next generation non-emitting technologies may be operating in decentralized manner, within competitive markets with aggregators. Virtual Power Plants (VPPs), decentralized/automated financial settlement systems or even AI driven localized dispatch systems to enable grid scale non-emitting technologies, as well as possible neighbourhood micro-grids trading with each other. This will require a rethink of the existing regulatory framework and business models at scale.

Regardless of the technology type, there will be the need for significant upgrades and expenditure to both the transmission and distribution systems to support the anticipated growth in both load and system peaks from fuel switching. While transmission costs have been identified in various reports, distribution system costs needed to support the transition are largely unknown, but likely significant. Utilities will be unable to properly assess or plan the transition needs unless the transition targets, regulatory frameworks and transition timelines are known.

The issue of costs (conservatively assessed at half a trillion dollars for Ontario until 2050 in Independent Electricity System Ontario’s *Pathways to Decarbonization* Paper) is one that cannot be sidestepped. We must recognize the importance of decarbonizing the province’s existing energy infrastructure in a cost-effective manner while also ensuring near and long-term energy security in Ontario. The majority of these costs will be recovered from energy consumers. Vulnerable populations may need targeted support through this transition. Without some level of targeted support, it is likely that public support for transition measures will wane if factors like inflation or wage suppression remain in place.

Government actions necessary to enable the transition include:

- Clearly signalling GHG emission reduction targets on a sectoral basis, with realistic timelines to minimize stranded/under-utilized assets and allow for optimal planning.
- Preferential tax options (depreciation, investment tax credits etc) for the implementation of decarbonisation/clean technologies to ease the financial burden of the transition. This should also include investments in enabling distributions and transmission systems to support such technologies.
- Establish carbon-intensity definitions and emissions factors for low-carbon fuels within Code and Standards to better enable alternative fuels. For example, to the best of our knowledge carbon-intensity thresholds within the nominal definitions of Green and Blue Hydrogen have not been established yet, and there is no recognition for emissions factors for hydrogen and RNG.

- Create supporting mechanisms, financial and otherwise, for vulnerable populations impacted by the costs of the transition.
- Continue providing rebates for applicable retrofit activities within the residential and commercial spaces. This is critical since hitting climate change targets may rely on changing the environmental profile of Canada's substantial legacy infrastructure and buildings.
- Establish innovation funds for the commercialization of clean-tech and/or projects that demonstrate scalability of the technology and ensure equal opportunity for innovation to occur in both the electricity and natural gas sectors.
- Ensure that the Federal government's decision-making aligns with the planning and regulatory decision-making cycles at the provincial levels. The delay in settling the details of the Clean Energy Incentive Tax Credit (ITC) has had downstream impacts on Ontario's energy procurement cycles.

In summary, while the provincial and federal governments have distinct constitutional boundaries, the federal government can support the transition by providing clarity in terms of targets, continued financial support via rebates, aligning decision-making cycle and building robust codes and standards.

GREEN JOBS

The energy transition in Ontario is going to drive a huge increase in demand for a variety of skillsets needed to transition our system. There are expectations that we will need to, among other things:

- possibly triple the capacity of our current electricity system;
- develop a new hydrogen system and economy;
- develop a new alternative fuels system and economy;
- develop a new CCUS system and economy.

Both the federal and provincial governments need to plan now for the labour needs in this massive undertaking. There is no doubt that this transition and its associated jobs represent both a substantial economic opportunity and potentially an implementation liability if adequate levels of labour supply are not available.

The clean tech/energy sector represents an enormous potential source for future desirable well-paying jobs for Canadians. These include hardware solutions (micro-grids, renewables, batteries, thermostats, heat pumps etc), software solutions (peer-to-peer distribution and settlement, TOU/Peak Dispatch control, vehicle to load software) and energy services (e.g. DERs system aggregators etc). In addition, there are opportunities for the installation and maintenance services of equipment.

The traditional energy sector in Ontario (specifically centralized electric and gas generation, transmission and distribution) represents a significant base of economic activity. The nuclear sector employs over 65,000 people, while the electric and gas utilities combined employ an additional 50,000 people. If growth forecasts are accurate, it is likely that Ontario will need to increase its

energy labour force capacity by more than double to meet growing demand for energy, while filling the gaps left through retirement planning.

According to the IESO'S Pathways to Decarbonization (P2D) report (high-growth scenario), in less than 30 years Ontario could need more than double its electricity generating capacity, from 42,000 megawatts (MW) today to 88,000 MW in 2050. Up to 20,000 MW in capacity may be needed just to replace generation that will come to the end of its life, or be phased out, over the next three decades. All of which will require labour to decommission, build, maintain, and operate energy assets and infrastructure. While studies are being undertaken to better understand the scope of the upcoming labour needs, OEA's stakeholders have indicated that it will likely be in the range of 10s of thousands of additional jobs.

The energy sector represents an incredible opportunity to build more green jobs. The challenge is that in an extremely tight labour market, qualified individuals are increasingly hard to find on a replacement basis, let alone for expansionary needs. Without a steady and growing labour supply, the work to enable the transition in a timely manner will stall out rather than materialize as an opportunity, and potentially pose an implementation risk for decarbonization.

Both the provincial and federal governments need to work together to;

- Find resources to close existing gaps for skilled trades,
- Expand the talent pool for the sector to draw from, and
- Expand skilled trade resources and outreach in grade school and/or with non-tradition sources for skilled trades (Indigenous populations, Immigration, etc.)
- Potentially look at immigration to bring in skilled labour from other jurisdictions

HYDROGEN

Hydrogen, along with renewable natural gas (RNG) represents a cutting-edge opportunity to decarbonize elements of the economy and gas industry. Companies in Ontario such as Enbridge Gas and Atura Power are leading the charge to safely deploy hydrogen for residential end-use and electricity generation. There are several benefits to leaning into the hydrogen economy:

- Hydrogen can expand energy system customer optionality and resiliency by leveraging Ontario's exist natural gas system infrastructure and associated human resource skills;
- Some decarbonization solutions will require alternatives to electricity for technical reasons specific to each required customer solution;
- The gas network throughout Ontario is extremely resilient to extreme weather impacts due to its buried assets. Hydrogen blends with RNG will continue utilizing the network to deliver decarbonized energy and will be largely shielded from adverse weather events.
- Domestically produced green and blue hydrogen may be utilized to decarbonize other carbon intensive sectors of the economy. Hydrogen will likely be an important fuel source for heavy transportation in particular and is also a replacement fuel for coal in the steel industry.

- Domestically produced green and blue hydrogen also represent continental and international export opportunities.

The hydrogen economy is still in its formative stages and needs several regulatory pieces to fall in place. These include:

- The creation of a regulatory framework to access limited pore space for Carbon Capture and Underground Storage (CCUS). Hydrogen hubs already exist Sarnia, but the hydrogen produced would be considered “grey” due to the carbon intensive production methods. Developing CCUS frameworks will allow for existing grey hydrogen to be recategorized as “blue” hydrogen, thereby decarbonizing the existing hydrogen sector.
- Bringing up to speed the Codes and Standards within Canada. Canadian Codes and Standards are likely several steps behind leading international jurisdictions such as the European Union. For example, the Canadian Standards Association continues to lag in two key areas;
 - Hydrogen-blend standards for existing gas pipelines as well as the end-use certificates for existing appliances to use to hydrogen-blends. The first use-case for hydrogen will be existing assets, which cannot happen unless Codes and Standards are brought up to speed.
- Allowing for the cost-recovery of hydrogen as a fuel source: Right now there is no formal market for hydrogen within Ontario and cost-recovery for the fuel isn’t allowed under existing regulatory framework. Unless some mechanism for cost-recovery is allowed, the hydrogen economy will remain relegated to pilot/demonstration projects.

For the hydrogen economy, path forward will be for the Federal and Provincial governments to cooperate to close these and other gaps that have been identified by energy stakeholders.

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