

Ontario's Energy Future Sector Analysis

A Report commissioned by the Electrical Contractors' Association of Ontario (ECAO)

ECAO Member Executive Summary

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Ontario's electricity system is in transition. Driven by economy-wide decarbonization efforts in response to the global climate crisis, Ontario's electricity sector is rapidly evolving to enable the shift from fossil-based energy sources to clean energy sources. Whether it is the installation of a new electric vehicle charging station, the development of a local microgrid system or the upkeep of a large-scale transmission line, electrical contractors and their skilled workforce are essential to powering Ontario's economy, especially now as the need for new electricity supply grows.

In short, the electricity system of 2035 will be much more diverse, complex and interconnected relative to today's electricity grid and will require a highly-trained, skilled workforce of electrical contractors to support its development. Further, while electrical contractors are already viewed as the "experts" in this regard, technology and services are being developed faster than ever before. There will be a greater need for electrical contractors in the economy, given the demand to connect new electrical devices (e.g., EV Chargers, heat pumps, micro-grids, etc.) to the grid.

ECAO member contractors are uniquely positioned to assist in this electricity system transition, and the opportunity to increase our market share as a result is substantial. It is our contractor members, as the 'experts' in the industry, who should be at the forefront of designing and installing these complex systems.

Our 'Ontario's Energy Future Sector Analysis' report reviews the main drivers for change in Ontario's electricity system, summarizes critical trends in the province's electricity sector, and provides recommendations to ensure the labour readiness of the electrical contracting industry.

The key take-aways from this report are:

1. Significant transformation is happening in a concise timeframe.
2. The pursuit of a net-zero economy has impacts on the electrical contractor industry and Ontario's workforce.
3. Considering the need for new electricity supply, Ontario requires significant investment in new electricity resources and expertise.
4. Ontario is entering a period of regular procurement and developing new electricity resources.
5. To alleviate regional transmission constraints, the Independent Electricity System Operator (IESO) is planning new transmission projects and prioritizing the procurement of generation resources in regionally constrained areas.
6. Electricity grids are becoming more complex with increased deployment of Distributed Energy Resources (DERs) and non-wired solutions.

CALLS TO ACTION:

- READ THE REPORT – consider its content in relation to your business
- DISTRIBUTE THE REPORT – share it with your employees, colleagues, partners
- DISCUSS THE REPORT – have frank discussions about Ontario's electricity future and how you can evolve and grow to meet the industry's needs and ensure your success

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Given the rapid pace and magnitude of the energy transition, ECAO contractors and our skilled workforce will be at the forefront of ensuring electrification occurs in a manner that ensures safety, affordability, reliability and resiliency. The energy transition will likely include a variety of pathways in which our contractors and their skilled workforce will need travel so that they are appropriately skilled and trained. Key areas of focus to consider include:

- Smart grid transmission and Advanced Metering Infrastructure (AMI) technology including smart meters;
- Proficiency in clean technology, both large (large nuclear, small modular reactors, renewables, battery storage, long duration storage, and so on) and small (heat pumps, residential electrical vehicle chargers, smart thermostats and the overall connected home); and
- Understanding microgrids and connecting multiple technologies that operate in island mode or are related to the grid but can participate in market systems in the wholesale or local markets. This will entail having a firm grasp of market rule requirements relating to meters and telemetry.

For industrial and residential customers, ECAO contractors will be essential in advising on energy management systems. Our expert contractors must remain trusted advisors and support our existing, and new, customers through the transition.