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2024 CCRE Annual Leaders Roundtable

# *Energy Transition: Is There A Plan*

October 17, 2024

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# *Taking into account the scope of the challenge across Canada:*

# *What is the chance for achieving transition success*

**Hydro can't deliver the electricity needed to hit climate goals: expert**

$36-billion plan merely a `down pay-ment' on what the province needs over 10 years

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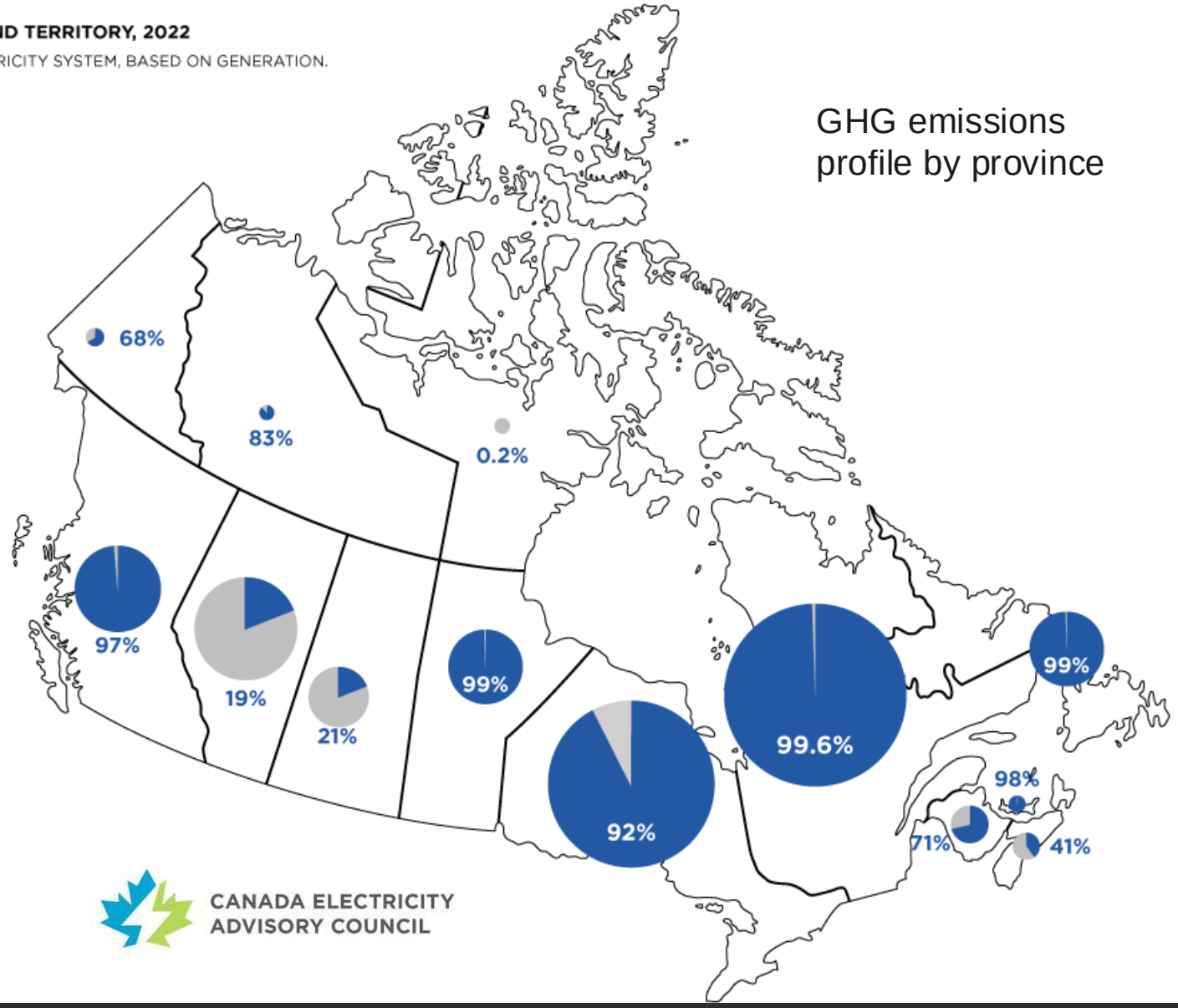
# Pan-Canadian Distruption

**What has been characterized as transition predicated on the fight to lower carbon emissions across the country, during a period of oversupply of electricity, has become a race to attract investment in new, high consumptive customers.**

**Reliability has become centre stage amongst affordability and sustainability as key imperatives.**




GHG emissions profile by province



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# Evolutionary Change

- Key trends we are expecting through the 2020's into the next decade:

    1. **Expanding and accelerating the delivery of energy and capacity resources to meet forecasted supply deficiencies;**

    2. **Developing new nuclear generation while expanding thermal (gas-fired) generation to meet near-term reliability needs, accompanied by increased intra and interprovincial transmission.**

    3. **Supporting and accelerating "last mile" customer connections, particularly at the distribution level.**

- While the primary focus remains at the bulk system level for generation and transmission assets, it is expected that DERs and CDM will increase in importance. How this will happen at scale remains elusive.

- The relationship with the federal government is critically important – from "sticks" (e.g. CER) to "carrots" (e.g. ITCs). How will this evolve with an election expected in 2025. Concurrently, with federal support mechanisms cloudy in the future, how the energy transition will be financed is particularly unclear (particularly as affordability issues remain very high).


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# The Big Build: Ontario's Electricity Transformation is Underway

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## 2024 – 2025

- New commitments to small hydro facilities
- First large battery facility comes online
- Expanded energy efficiency Programs launched
- New capacity exchange agreement with Hydro Quebec
- New market opportunities for Local energy projects (TBC)
- New Transmission Lines in SW, NE and NW Ontario (2025-30)

## 2026 – 2028

- Battery fleet grows, contributing to Ontario's system needs

## 2030 – 2034

- Non-emitting generation fleet continues to grow
- Expanded and new gas-fired generation will be required.
- New transmission likely will be required around the GTA, from North to South, to enable new nuclear and exports

## 2029

- First small modular reactor powers up

## 2030 – 2034

- Proposed Pickering Refurbishment

## 2032

- Darlington & Bruce nuclear refurbishments largely complete

## 2035 – 2050

- New nuclear at Bruce Power, OPG Welseyville, possibly Lambton and Nanticoke



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# Big Questions for the Future

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**1.** How to finance the energy transition

**2.** Siting requirements for assets

**3.** Deliverability limitations

**4.** Expediting environmental permitting and approvals

**5.** Timeliness of procurement and development schedule

**6.** Availability of equipment and labour

**7.** Impacts of market changes



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# Competing Pressures and Imperatives

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## Federal

- Objective: net-zero system by 2035 – will this change?
- Macro challenge to increase supply while reducing reliance on emitting resources.
- Multiple provinces are going through similar challenges. What role will the feds play over time in the electricity sector?
- **How will a change in government affect "sticks" like the CER, but also carrots like ITCs and direct subsidies?**

## Integrated Planning

- Trend towards more integrated gas and electricity planning.
- Upcoming cadenced procurements (in Ontario, LT2/MT2, LDES, hydro, LT3, LT4) could be expedited and/or consolidated,.
- Addressing local social licence and expediting transmission will be key.
- **Reliability and affordability supplanting near-term interests to suppress gas-fired generation. But renewables and nuclear interest high.**

## Affordability, Reliability, Sustainability

- The three strategic policy pillars that must be balanced, with a priority on reliable and affordable.
- Reliability in 2029 seen to be particularly at risk, although between now and then could face challenges.
- In Alberta, what will happen to the energy-only market through R.E.M, and what about reliability contracts for coal-to-gas?
- **It is increasingly unclear how carbon emissions reduction will factor into policy making, planning and procurement.**

## Distribution System & DERs

- Electricity use at the Dx level will increase significantly, compounded by electrification of industrial processes at the higher voltage level leading to heightened supply challenges
- Requirements for grid modernization and Tx-Dx interoperability.
- How best to advance DSOs and DERs?
- **Expediting and streamlining connections a huge priority for government.**

- What changes will these trends have on the relationship between governments, system operators, utilities and investors? Change may be particularly acute in BC (depending on election outcome), Alberta, Ontario, and Quebec.



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