

Ontario's Cleantech and Environment Sector Overview

Includes processes, products or services that reduce environmental impacts through increased energy and resource efficiency



- Ontario has the largest cleantech and environmental sector in Canada with strengths in many subsectors
 - Home to 40% of Canada's employees
 - Contributes 34% to Canada's total GDP value of environmental and cleantech products
 - Exports grew 11% from 2020 to 2021

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* Data from Statistics Canada, 2021 results obtained January 2023

Ontario's Environmental Plan

Cleantech companies are crucial private sector partners required to achieve the objectives laid out in the Made-in-Ontario Environmental Plan.



Ontario's Environment Plan supports technologies that:

- Help protect air, land and water
- Address litter and reduce waste
- Support Ontarians to continue doing their share to reduce greenhouse gas emissions
- Support municipalities to prepare for climate change.





Ontario's Electricity System

Current Installed Capacity - Transmission system





Pathways to Decarbonization

A report to the Minister of Energy to evaluate a moratorium on new natural gas generation in Ontario and to develop a pathway to zero emissions in the electricity sector.

DECEMBER 15, 2022

In 2013, Ontario became the first North American jurisdiction to phase out coal power.

- Over the past decade, wind, solar, bioenergy, hydro, refurbished nuclear and natural gas-fired resources have replaced Ontario's coal fleet
- 91% of Ontario's electricity in 2021 came from clean sources, 35% of which is hydro, wind, and solar.





New Clean Energy Registry

Ontario is leveraging its clean electricity grid by developing a voluntary Clean Energy Credit (CEC) registry to boost Ontario's international competitiveness and attract jobs.



- The Ontario government has directed the Independent Electricity System Operator (IESO) to design a provincial CEC registry, that would give businesses more choice in how they achieve their corporate sustainability goals.
- The program is expected to start in 2023
- Voluntary CECs are certificates that each represent 1 megawatt-hour (MWh) of clean electricity that has been generated from a non-emitting source, such as solar, wind, bioenergy, hydroelectric and nuclear power

Microsoft to procure clean energy credits from OPG



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https://ero.ontario.ca/notice/019-5816

Ontario's Low Carbon Hydrogen Strategy



Ontario's Low-Carbon Hydrogen Strategy

A PATH FORWARD

Ontario 😵

Ontario's strategy is guided by the following objectives:

- Generate economic development and jobs
- Reduce greenhouse gas emissions
- Promote energy diversity
- Promote innovation and investment
- Strengthen collaboration

Planned actions include:

- 1. Launching the Niagara Falls Hydrogen Production Pilot
- 2. Identifying Ontario's Hydrogen Hub Communities
- Assessing the Feasibility of Hydrogen Opportunities at Bruce Power Nuclear Plant
- 4. Developing an Interruptible Electricity Rate
- 5. Supporting Hydrogen Storage and Grid Integration Pilot Projects
- 6. Transitioning Industry Through the Use of Low-Carbon Hydrogen
- Consulting on an Ontario Carbon Sequestration and Storage Regulatory Framework
- 8. Supporting On-going Hydrogen Research





Carbon Capture and Sequestration

- Ontario posted a discussion paper in January 2022: <u>Geologic Carbon Storage in Ontario</u> to consult on removing the storage prohibition in the Oil, Gas and Salt Resources Act
- Most potentially viable geology may be in southwestern Ontario under Lake Erie and Lake Huron. These areas are owned by the Crown.
- There is currently no regulatory framework designed for stand-alone carbon sequestration projects.
 - Existing frameworks for oil, gas and underground storage have requirements or prohibitions that would apply to some projects



Generalization of opportunities

Ontario's Forest Biomass Action Plan

The forestry strategy committed to developing a Forest Biomass Action Plan that secures jobs and encourages sustainability in the forest sector, while supporting economic development through the use of forest biomass.



To support these goals, 5 pillars of action have been identified:

- 1. Identify pathways to markets for forest biomass.
- 2. Support demand for forest bioenergy and bioproducts.
- 3. Improve the business and regulatory environments for the use of forest biomass.
- 4. Support holistic, culturally relevant pathways for Indigenous community involvement in forest biomass value chains to support reconciliation between Indigenous communities and the Crown.
- 5. Communicate, collaborate, and inform on forest biomass opportunities.





Globally Recognized Leading Cleantech Research



Some Cleantech Related Industry Associations



Ontario Environmental Industries Association









Association canadienne de l'énergie renouvelable éolien. solaire. stockage.

















Cleantech Focused Accelerators

- Cleantech focused accelerators that provide physical space in addition to other services include MaRS Cleantech and Cleantech Commons.
- Foresight Canada provides services to cleantech start-up companies across Canada













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