

# Ontario:

## Clean Electricity Snapshot 2022-2024



Ontario was the first province to complete its coal phase out in 2014, which ended smog days in the province and represents North America's single largest greenhouse gas reduction initiative, cutting 17% of Ontario's emissions — the equivalent of taking seven million cars off the road. The province is a global leader in nuclear generation and is leading small modular reactor (SMR) developments at Darlington. The build out of additional hydroelectric facilities, wind, solar, and energy storage, as well as continued development of SMRs and large-scale nuclear generation will keep Ontario on track to achieve net-zero emissions and an affordable, reliable grid.

Ontario's grid is already 92% clean, and this abundant, affordable sustainable power has attracted billions of dollars in investment to the province, including major automotive investments like Volkswagen and Honda.

*Powering Canada's Future* is the Government of Canada's strategy for clean electricity, setting out a path to build electricity grids that will serve as the backbone of our low-carbon economy. It combines historic investments and balanced, fair regulations to enable building new electricity production in Canada with the affordable, reliable, clean and renewable energy sources Canadians can depend on.

### Federal Investments

As of November 2024, the Smart Renewables and Electrification Pathways Program (SREPs) has supported 20 projects with over \$131 million in Ontario.

In February 2024, the Government of Canada [announced an investment in Ontario's expansion of nuclear energy](#), with up to \$50 million in federal funding for Bruce Power's assessment of new generation opportunities at its site in Tiverton, Ontario.

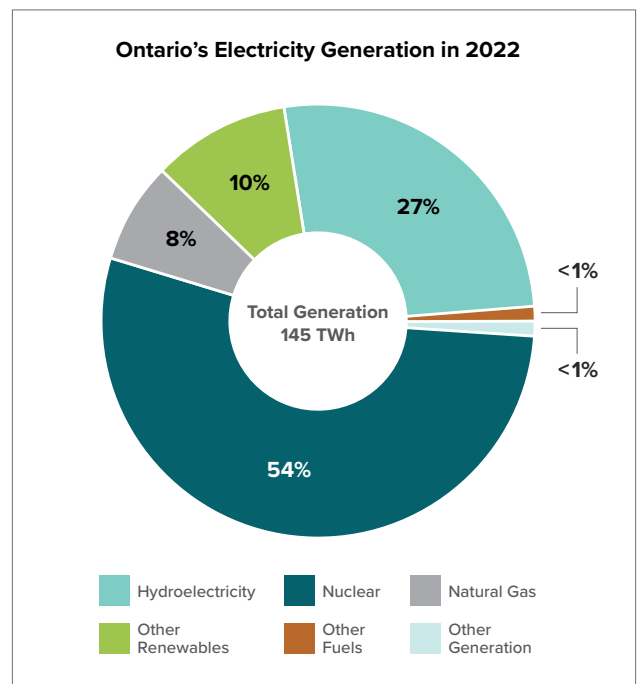
In February 2023, the Government of Canada announced a [\\$50 million investment in the 250 MW Oneida Energy storage project](#). The Indigenous-led project will help support Ontario's clean energy grid while creating jobs and reducing emissions.

In February 2023, the Government of Canada invested to build a heat and power facility that uses locally sourced wood waste to produce energy for Whitesand First Nation, and in Armstrong and Collings, Ontario.

The federal government has been a strong supporter of SMR development and in August 2022, [Canada Infrastructure Bank made their first SMR investment of \\$970 million](#) in support of Ontario Power Generations Darlington project.

### Emissions and Electricity Generation

According to the [National Inventory Report](#), in 2022, over 50% of Ontario's electricity was generated from nuclear energy, while 38% was generated from hydro, wind, solar, and other generation. Around 8% of electricity was generated from natural gas and other fuels.



## Ontario Call for Power

In 2024, Ontario expanded its largest-ever competitive energy procurement by 50%. The provincial government has increased its target for the procurement from 5,000 megawatts (MW) to 7,500 MW of energy to meet the growing demand for clean and reliable energy. This procurement builds on nearly 3,000 MW of new battery storage projects in development to ensure energy produced by wind and solar generation can be stored and used effectively and reliably. Ontario is also focused on new transmission infrastructure and energy efficiency initiatives.

## Nuclear Power

Ontario has long used nuclear power for its energy needs, hosting 16 of Canada's 17 reactors. In fact, the province is one of the world's most foremost nuclear energy superpowers and has exported its technology around the world.

The [Pickering Nuclear Generating Station](#) produces 2,100 MW of clean electricity, which powers 1.5 million homes annually and has generated 4,500 jobs. Its planned refurbishment will create about 11,000 jobs per year and allow it to continue providing clean electricity to Ontario's grid for an additional 30 years. In 2026 alone, the [Pickering Nuclear Generating Station](#) is expected to reduce 2.1 megatonnes of carbon dioxide emissions.

The [Darlington Nuclear Generating Station](#) has the capacity to generate 3,513 MW of clean power—enough to power 2 million homes. Its [refurbishment](#) is currently underway for the last four units and proceeding on-budget and ahead of schedule. It is expected to be completed by the end of 2026, and to create 14,200 jobs per year.

The [Bruce Nuclear Generating Station](#) is the largest operating nuclear generating station in the world and provides approximately 30% of Ontario's electricity. [Bruce Power](#) is also working to refurbish six of its eight units to provide carbon-free electricity until 2064. Bruce Power has plans to refurbish four more of its units between now and 2033.

## Small Modular Reactors (SMRs)

Canada's first [grid-scale SMR](#) is a 300 MW project underway at Ontario Power Generation's Darlington nuclear site. The 300 MW project is expected to power 300,000 homes and create 2,000 jobs in its lifetime. An additional three SMRs are planned at the site which would bring the capacity of the Darlington New Nuclear Project in Ontario to 1,200 MW — enough to power 1.2 million Ontarian homes.

## Solar Power

In 2019, the [Nanticoke Generating Station](#) partnered with the Six Nations Development Corporation and Mississauga's of the Credit First Nations to develop their first solar power facility. The facility can generate 44 MW of power, which is enough to power a small town.

## Wind Power

The [Melancthon project](#) is one of the largest wind projects generating 545,000 MW hours each year.

The [Henvey Inlet Wind Facility](#) is the largest first Nation wind energy partnership in Canada and can generate 300 MW of power which is equivalent to about 250,000 homes. The facility provided 1,200 jobs during the two-year construction period, with an additional 100 jobs expected through the expansion of programs and services.

Generating 270 MW of electricity, the [K2 Wind facility](#) is expected to produce clean renewable electricity to around 100,000 Ontario homes a year. During the construction period, the facility supplied around 300 on-site jobs and around 20 full-time jobs with seasonal positions and the use of local contractors.

## Hydro Power

In 2022, [Ontario Power Generation](#) released a report identifying the significant hydroelectric potential in northern Ontario, estimated to be between 3,000 to 4,000 MW.

The [Ontario government](#) is expanding and refurbishing hydroelectric facilities across the province by announcing more than \$2.6 billion to refurbish 12 stations. Combined, these investments will power 4.3 million homes.

## Storage

Ontario has ambitious goals for battery storage, with the first long-term procurement underway and a goal of being one of the largest battery fleets in North America.

In May 2024, Ontario completed the [largest battery storage procurement](#) in Canadian history, securing nearly 2,700 MW — enough to power over two million homes. When combined with the Oneida Energy Storage Project, Ontario's entire storage fleet will be comprised of 26 facilities with a total capacity of nearly 3,000 MW.

## Economic Opportunities

In addition to cleaner air and lower greenhouse gas emissions, a clean electricity grid can stimulate investment in innovation, provide economic opportunities, and create good jobs.

## New Jobs

Electrification and the transition to cleaner forms of electricity generation is expected to create good jobs across Canada. For instance, independent experts at [Clean Energy Canada](#) forecast that there will be around 731,600 clean energy jobs added in Ontario between 2025 and 2050.

There are multiple companies that chose to locate in Ontario over other jurisdictions including the United States, in order to access the province's low-emitting electricity system.

In April 2023, [Volkswagen](#) announced an investment of \$7 billion to build an electric vehicle battery manufacturing plant in St. Thomas, Ontario. It is anticipated to create 3,000 direct jobs and up to 30,000 indirect jobs while generating about \$200 billion in value.

For example, in April 2024, [Honda](#) also announced an investment of \$15 billion to create Canada's first electric vehicle supply chain in Ontario. It is anticipated to create over 1,000 well-paying manufacturing jobs and thousands of direct and indirect jobs in the province.

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