

What is nuclear energy?

Nuclear energy is a result of splitting atoms in a reactor to heat water into steam, turn a turbine and generate electricity.

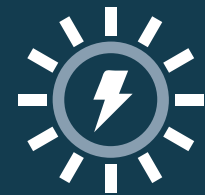
Nuclear power is one of the best ways to meet the constant and growing electricity demands of Ontario reliably, cost effectively, and without the environmental impact of greenhouse gas and carbon emissions.

50%

of Ontario's power needs are met by nuclear



nuclear energy helps avoid 80 million tonnes of CO2 emissions per year— equal to removing 15 million cars from the road



Nuclear allows for consistent 24/7/365 baseload power generation, unlike wind and solar

As provinces move towards electrification and a growing demand on the electrical grid, the output from renewable energy such as solar and wind power are not enough to power our towns and cities. Nuclear power is essential in the fight against climate change because of its ability to produce large amounts of clean energy in a cost efficient, safe, and reliable way.

Nuclear isotopes save lives

Nuclear isotopes, harvested directly from CANDU reactors, are used to sterilize medical devices and play an important role in medical imaging and diagnostic procedures, as well as in medicine and new drug development.

From cancer to Alzheimer's to brain disease, medical isotopes are a game changer and the nuclear industry is leading the way for the world.



40% of the world's medical devices are sterilized with Cobalt-60 from Ontario



Cobalt-60 is also used to sterilize human tissue grafts for reconstructive surgery, and even wine corks



100 million patients per year are treated using single-use medical supplies irradiated by Cobalt-60

Low-waste energy

The Pickering Nuclear Generating Station (PNGS) uses effective waste sorting and segregating techniques to ensure that every item is considered, and takes full responsibility for the entire lifecycle of the waste, a level of responsibility that is unique to the nuclear industry.

The reactors are a powerful source of new nuclear products like Cobalt-60 and Molybdenum-99. The waste is then given new life for uses such as power quantum computing, medical tracer technology, and help protect our borders.

What's happening in Pickering?

Refurbishing Pickering will involve removing and replacing major components of each reactor and its associated equipment, including pressure tubes, calandria tubes, and feeder pipes, as well as the plant's steam generators. Refurbishing Units 5-8 will allow PNGS to continue producing safe, reliable energy for Ontario, which will provide many benefits to customers, the economy, and the environment.



In 2023, PNGS recorded its second-highest output as a six-unit station.



The plant produced a total of 21.5 terawatt-hours of energy, enough to power more than two million homes in Ontario.



It powered two million homes and businesses across Ontario, safely and reliably.

Giving back to the community



OPG's The Power for Change Project was designed to address the most pressing needs of communities, and to give back to Ontario and to the communities where they operate, to help build a cleaner, more sustainable future for generations to come. Some key initiatives include: Bring Back the Salmon, Tuesdays on the Trail, March Break Programs, Environmental Stewardship Pickering. OPG also sponsors many community events, foundations, and fundraisers.

The benefits of being a nuclear host community

Being a nuclear host community brings many economic advantages: in addition to having access to clean energy, the infrastructure and network that supports PNGS bring thousands of high-paying jobs to the City of Pickering.



Post-refurbishment of the facility would create and sustain about 6,400+ Ontario jobs per year.



It will secure more than 2,100 MW of power for Ontario for another 30-plus years.

14%

PNGS accounts for 14% of Ontario's energy demand

Nuclear businesses

AtkinsRéalis
Black & McDonald Ltd.
Durham Instruments
Framatome
Kinectrics

Nucleom
OCNI
Tetra Tech
TRC Ltd. Industrial Sales & Manufacturing
UCC Industries International

are all Pickering-based businesses that support PNGS and contribute to local employment opportunities.