

# YOUR NUCLEAR ENERGY PARTNER

Ontario is a global leader in nuclear energy, with a proud history of safely operating nuclear power plants for over 60 years. This legacy began with the launch of the first made-in-Ontario CANDU (CANada Deuterium Uranium) reactor in 1962, a groundbreaking achievement in Canadian engineering and innovation. Today, Ontario's nuclear power stations—located in Pickering, Darlington, and Bruce County—are internationally recognized for their exceptional standards in operational safety, reliability, and performance.

Nuclear energy forms the backbone of Ontario's clean electricity grid, helping to reduce greenhouse gas emissions while supporting economic growth and energy security. Through continued investment in technology, safety, and skilled workforce development, Ontario remains at the forefront of nuclear innovation and sustainability.

## ONTARIO'S NUCLEAR INDUSTRY BY THE NUMBERS

**10**

REACTORS BEING  
REFURBISHED

**16**

CANDU REACTORS IN ONTARIO  
ACROSS 3 NUCLEAR POWER  
STATIONS – BRUCE, DARLINGTON,  
AND PICKERING

**51%**

OF ONTARIO'S ENERGY  
OUTPUT (2024)

**12,184<sup>MW</sup>**

INSTALLED NUCLEAR  
POWER GENERATION  
CAPACITY (2024)

**200+**

COMPANIES MANUFACTURING  
MAJOR COMPONENTS,  
SPECIALIZED EQUIPMENT  
AND ENGINEERING SERVICES

**80,000+**

JOBS (INCLUDING  
SCIENCE, HIGH-TECH AND  
ENGINEERING)

## OPPORTUNITIES IN **SMALL MODULAR REACTORS (SMR):**

SMRs are versatile nuclear reactors typically generating around 300 MW or less that can be factory constructed and assembled at the point of use. SMRs can be used for electricity production, supplying process heat/steam for industrial use or hydrogen production. Ontario is proceeding with construction of the first of four SMRs at the Darlington new nuclear site, the first SMR project in a G7 country.

(2030-2035)  
**1,200<sup>MW</sup>**  
CLEAN, RELIABLE  
ELECTRICITY

**3,700**  
SMR JOBS

**\$38.5B**  
TO GDP

REDUCES  
2+ MEGATONNES OF  
**CO<sub>2</sub>** EMISSIONS



The world's first SMR engineering and service center [in Ontario] [...] highlights the strong collaboration between government, industry and academia that is the backbone of Ontario's reputation as an energy superpower"

**Dr. Steven Murphy**  
President and Vice-Chancellor  
**Ontario Tech University**

## **MEDICAL ISOTOPES PRODUCTION:**

New, innovative medical isotope production processes are being developed in Ontario's CANDU power reactors. Their unique design allows for the isotopes to be harvested while they continue to operate and generate clean energy.

### **IODINE-125 AND HOLMIUM-166**

McMaster Nuclear Research Reactor is the world's leading supplier of isotopes, providing treatment for more than **70,000** cancer patients every year.

### **MOLYBDENUM-99 AND YTTRIUM-90**

Key medical isotopes for diagnostics and cancer treatment expected to begin commercial production at Darlington in 2025.

### **LUTETIUM-177**

Bruce Power unit 7 became the first commercial power reactor to produce the Lutetium-177 isotope used for cancer treatment and Laurentis Energy Partners at Darlington will begin production of the isotope in 2027.

### **COBALT-60**

Half of the world's Cobalt-60 medical isotope supply is produced in Ontario's nuclear power reactors.

## **RESEARCH AND INNOVATION:**

Ontario is a global leader in nuclear energy and medical isotope innovation, supported by top-tier universities and research institutions committed to advancing nuclear science, engineering, and technology. The launch of the Nuclear Isotope Innovation Council of Ontario (NIICO) will help double the province's medical isotope production by 2030, strengthening its role in global health care.

With over 70,000 STEM graduates annually and five universities in the University Network of Excellence in Nuclear Engineering (UNENE), Ontario is preparing the next generation of nuclear talent. The province is home to 75% of Canada's research reactors, providing critical infrastructure for nuclear research and development. Together, these assets position Ontario at the forefront of innovation in clean energy and life-saving medical technologies.

**FOR MORE INFORMATION ABOUT ONTARIO'S CLEANTECH SECTOR:**

SourceFromOntario.com | InvestOntario.ca

Ontario

All figures are in Canadian dollars unless otherwise noted.  
This information is accurate at the time of printing.

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