The Clean Energy Frontier *lives right here.*

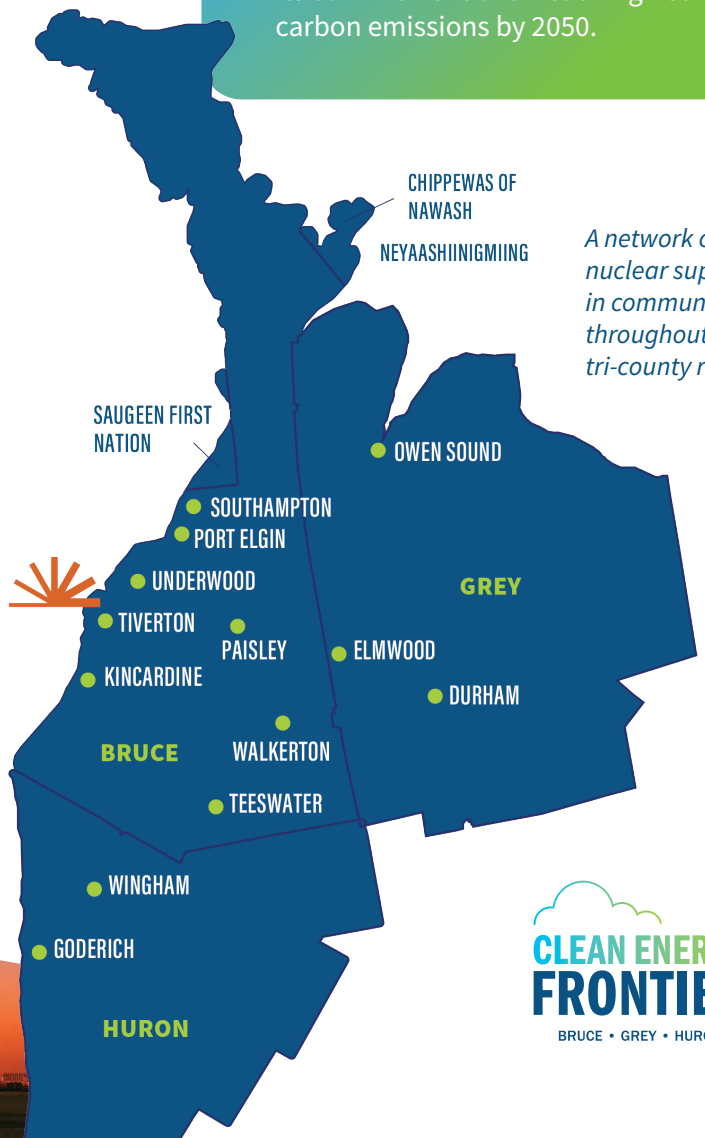
Bruce, Grey and Huron counties make up the Clean Energy Frontier. The common thread between these three regions is the significance of clean energy as an economic driver, along with tourism and agriculture.

The Clean Energy Frontier program is funded by Bruce Power as part of the Bruce Power Nexus Research Centre. Delivered in collaboration with the Nuclear Innovation Institute (NII), the program supports economic development initiatives that strengthen the region's clean energy leadership —both today and for generations to come.

From supply chain growth to workforce readiness and community development, the Clean Energy Frontier program provides municipal leaders and local organizations with the tools, data and context they need to plan for growth and opportunity.

Nuclear is clean energy because it doesn't emit carbon into the air.

It's a reliable energy source capable of providing much of the province with electricity. The shift toward nuclear is helping the Government of Canada meet its commitment of of reaching net-zero carbon emissions by 2050.



A network of nuclear suppliers in communities throughout the tri-county region.

CLEAN ENERGY FRONTIER
BRUCE • GREY • HURON

Quick *facts*

Local supply chain

The Clean Energy Frontier has grown its local supply chain—businesses that support the nuclear industry —**from 13 in 2016 to more than 60 today.**

76k

The nuclear industry supports 76,000 direct and indirect jobs across Canada, with Bruce Power's ongoing operations supporting 22,000 direct and indirect jobs annually.

6.5%

Bruce, Grey and Huron counties saw combined population growth of 6.5% from 2016-2022.

Power generation in Ontario

- **50.9%** *Nuclear*
- **24.1%** *Hydroelectric*
- **15.7%** *Natural gas*
- **9.3%** *Wind, Solar, Biofuel*

The Clean Energy Frontier in Ontario's energy future

Ontario's first integrated energy plan—Energy for Generations—reaffirms nuclear power as "the backbone of the provinces electricity system."

The plan highlights the role of our region:

- Bruce Power's refurbishment and planned optimization (targeting 7,000 MW by the 2030s) are central to Ontario's long-term energy strategy and economic growth
  (for example, the Ontario GDP contribution from Bruce Power activities is more than **$4.03 billion**—view the full economic impact report here)
- The proposed Bruce C project is a key opportunity to meet growing demand
- A new provincial panel with leaders from Bruce Power, Ontario Power Generation, Independent Electricity System Operator and government will support coordination for future nuclear builds
- Potential life extensions of Bruce Power's units 1 and 2 could bring continued economic and clean energy benefits to the region

ISOTOPES

Lifesaving medical isotopes *start right here.*

Stronger together

The Southwestern Ontario Isotope Coalition (SOIC) consists of 34 partners from across Southwestern Ontario—partners include municipal governments, industry, academia, healthcare and research institutes. The Coalition is looking to expand the isotope ecosystem in southwestern Ontario through advocacy, research and collaboration

Isotopes at work

177 Lu

Lu-177 is produced on site at Bruce Power utilizing an innovative technology called the Isotope Production System.

Ontario is the first province in Canada to publicly fund the drug PluvictoTM, which utilizes Lu-177 to treat advance-stage prostate cancer. (First patient in Ontario treated with publicly funded Pluvicto™ in a major step forward for advanced prostate cancer care | Novartis Canada)

Cobalt-60 has been produced onsite at Bruce Power for over 30 years, used globally to sterilize medical equipment and treat certain types of cancer.

Notably, Colbalt-60 is utilized in Gamma Knife surgery, which is a non-invasive treatment for brain tumours and other abnormalities in the brain.

In the SOIC's latest report, *Unlocking our isotope opportunity – Review of regional opportunities*, the coalition puts forward twelve recommendations to ensure southwestern Ontario can accelerate growth as a global leader in the isotope sector—fuelling long term economic development, job creation and innovative leadership for this rural region.

Southwestern Ontario has the infrastructure and critical assets to support a thriving medical isotope sector, including:

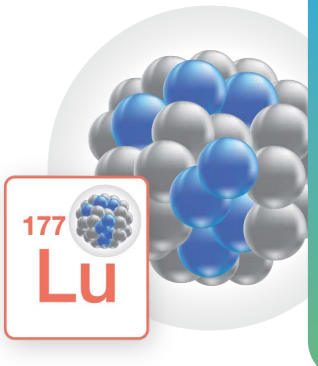
- *Bruce Power site and the Isotope Production System*
- *Supportive municipal governments*
- *Existing isotope ecosystem*
- *Local academia and research institutions*

SOIC
SOUTHWESTERN ONTARIO
ISOTOPE COALITION

Lifesaving medical isotopes *start right here.*

What are isotopes?

Medical isotopes are used to both diagnose and treat medical conditions like cancer as well as sterilize medical equipment like gloves, gowns and masks. Without lifesaving nuclear medicine, we wouldn't have many of the modern treatments for these conditions that we have today.



How are medical isotopes developed?

Bruce Power creates some of its isotopes using the innovative Isotope Production System, which is basically like a big Keurig machine: scientists put ingredients (a base isotope) into the nuclear reactor where it collects excess neutrons, "brewing" the isotope they want.

These 'raw materials' are then processed by pharmaceutical companies both in Canada and abroad.

Quick *facts*

40M+

More than 40 million procedures performed annually around the world use medical isotopes.[1]

About **760,000 diagnostic procedures and 76,000 radiation procedures** are performed in Canada each year.[2]

70%+

More than 70% of the world's supply of an important isotope called Cobalt-60 is developed in Canada's six nuclear power plants, the largest of which (Bruce Power) is right here in the Clean Energy Frontier.[3]

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[1] *https://cna.ca/nuclear-medicine/medical-isotopes/*
[2] *Ibid.*
[3] *https://natural-resources.canada.ca/our-natural-resources/minerals-mining/minerals-metals-facts/uranium-and-nuclear-power-facts/20070*

BRUCE C – NEW OPPORTUNITIES

New nuclear opportunities *begin right here.*

Bruce C Nuclear project

Bruce Power is exploring the development of up to 4,800MW of new nuclear capacity - Bruce C - at the existing Bruce Power site.

The project is technology agnostic—this means that currently, no nuclear reactor technology has been selected.

The project is in the early planning stages and is undergoing a federal impact assessment through the Impact Assessment Agency of Canada (IAAC) in collaboration with the Canadian Nuclear Safety Commission (CNSC).

As this work is completed through the Impact Assessment process, it would help to inform future electricity planning and would ensure that new build activities could proceed efficiently and effectively if a decision is made to advance the project.

What's an Impact Assessment?

An Impact Assessment helps identify and understand the potential effects of a project before any decisions are made to move forward.

It looks at things like:

- *Engagement with Indigenous communities to make sure their rights are protected*
- *Effects on the natural environment and studies into protecting it*
- *Dialogue with municipalities and the public*
- *Understanding all potential impacts of the project and proactively addressing areas of concern*

What Bruce C could mean for the Clean Energy Frontier region

- 4,800 MW of clean electricity for Ontario's grid
- Workforce development and future-ready skills
- One of the largest clean infrastructure projects in Canadian history
- Continued momentum for economic development, job creation and long-term population growth
- Positioning the region as a critical part of national efforts to achieve energy security and economic resilience

For up-to-date information on the Bruce C Project assessment through the Impact Assessment Agency of Canada, visit: **Bruce C Nuclear Project**

SPENT FUEL

Nuclear power produced right here and around the world!
accounts for every bit of its waste.

Our world depends on reliable sources of electricity.

Currently, more than half of Ontario's power is generated by nuclear energy; **30%** of which is produced here in the Clean Energy Frontier.

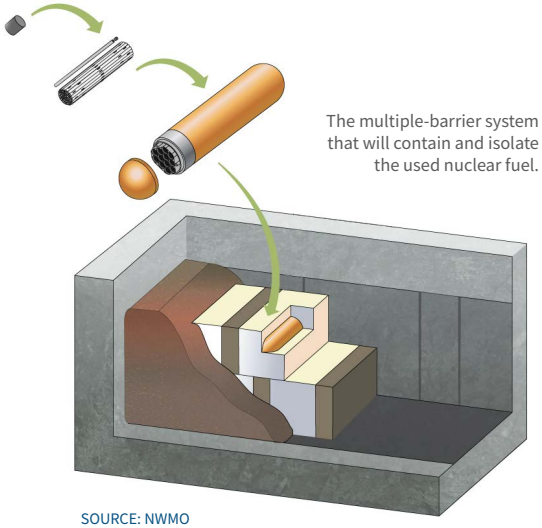
Why spent fuel?

When power is generated—no matter its source—waste is also generated. Coal or natural gas-powered electricity produces waste in the form of carbon emissions in our atmosphere.

Nuclear power also generates waste, which is referred to as *spent fuel.*

- Nuclear fuel is energy rich, which means a lot of power can be generated from a small amount, leaving behind minimal waste.
- If your entire life was powered from nuclear energy, the waste would fit inside a pop can.
- Used nuclear fuel is not a liquid or a gas—it is a stable solid. It's also non-explosive and non-flammable.

[4] *https://www.ieso.ca/en/Power-Data/Supply-Overview/Transmission-Connected-Generation*



The multiple-barrier system that will contain and isolate the used nuclear fuel.

SOURCE: NWMO

Canada's plan for the safe, long-term management of used nuclear fuel is moving forward. In 2024, the Wabigoon Lake Ojibway Nation-Ignace area was selected as the site for Canada's deep geological repository—a decision based on decades of technical studies and community engagement.

The NWMO will continue to lead this work, including regulatory approvals, detailed site assessments and community partnership agreements.

Although the Municipality of South Bruce is no longer being considered as a potential site, the municipality played an important role in advancing Canada's understanding of nuclear waste management. That work helped ensure the project is being developed with informed and willing hosts and in a way that prioritizes safety, environmental protection and long-term sustainability.

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ENERGY STORAGE

The future of clean energy *begins right here.*

Flip a light switch. Plug in your electric vehicle. Power up an MRI machine.

We expect to be able to use energy where and when we need it.

Ontario's Energy for Generations plan reaffirms the Province's support for energy storage and includes:

- Support for the Ontario Pumped Storage Project near Meaford, located in the Clean Energy Frontier region

Why can't we fully power the grid with wind and solar?

Sources like wind and solar are called *intermittent*—they can't be available all the time because of external factors like when the sun isn't shining or the wind isn't blowing.

But a steady supply of clean baseload power like nuclear helps other clean sources of electricity generation provide power to the grid when they're best able to do so.

All tools in the toolbox: a net-zero grid can include clean baseload, intermittent sources, and forms of clean energy storage.

What is energy storage?

Energy storage technologies range from mature, well-proven techniques like moving water (pumped storage) to emerging technologies like large-scale batteries, compressed air storage and hydrogen.

Energy storage can help by:

- *Acting as a clean backstop for Ontario's existing renewable generation.*
- *Complementing Ontario's existing and future nuclear assets.*
- *Maximizing the value of Ontario's surplus electricity for ratepayer benefits.*

Pairing the clean electricity produced by nuclear power with energy storage capacity will help lower greenhouse gas emissions while ensuring a dependable source of electricity.

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