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**33,000 jobs**

**3,000 jobs**

19 CANUD reactors at 4 nuclear power generating stations globally in nuclear power capacity

- **Small Modular Reactors (SMRs)**
  - The next wave of Canadian nuclear innovation: smaller, simpler and cheaper.
  - Canada is well-positioned to lead and capture a share of the emerging global market, operating on 4 continents, representing 5% of the world nuclear capacity.

- **SMR Project Opportunities in Late 2020s or early 2030s**

**Key SMR initiatives to ensure policy readiness and chart a path forward for SMR technology in Canada include:**

- Canada’s SMR Readiness (2019)
- Provincial MOU between ON, NB and SK on SMRs (2019)
- Canada’s SMR Action Plan (2020)

- Leaders in nuclear research and technology, Canadian-developed CANUD reactor technology operating on 4 continents, representing 5% of the world nuclear capacity.

- Strong nuclear science and technology presence across Canada: 6 research reactors and two technologies support R&D, and produce isotopes for medical and industrial applications, including more than 50% of the world’s supply of Cobalt-60.

**Support for a robust supply chain of over 240 companies, including 200 SMEs, and an R&D network of laboratories and universities.**

- $28 B investment planned and ongoing to extend the life of Ontario’s reactors - largest infrastructure projects in Canada.

World-leading innovators are pursuing the on-grid and mining markets in Canada for deployment in the late 2020s to early 2030s.

- 12 vendors are participating in CNEC’s Vendor Design Review
- Several vendors are working directly with utilities

**SMR Sites**

- Not Currently Under Review
- Under Review

- Potential SMR Sites / Under Review
- Not Currently Under Review

**SMR Sites**

- OPG Darlington On–Grid SMR (ON)
- NB Power Advanced SMR & Waste Management Facility
- Chalk River On-Grid Modular Reactor
- DFO Darlington On-Grid SMR (ON)

**Nuclear Energy**

A Key Part of Canada’s Climate Strategy and a Driver for Clean Growth

- Nuclear electricity in Canada displaces about 50 million tonnes of GHG emissions annually.
- Electricity from Canadian uranium offsets more than 50 million tonnes of GHG emissions worldwide.

**Uranium Mining & Milling**

- Uranium Processing - Refining, Conversion, and Fuel Fabrication
- Nuclear Power Generation and Nuclear Science & Technology
- Waste Management & Long-term Management

**Shaded or Decommissioned Sites**

- Inactive or Decommissioned Uranium Mines and Tailings Sites

-Yellowcake is refined at Blind River, Ontario, to produce uranium trioxide.

- Uranium ore is used to fuel CANUD reactors.

- UF₆ is exported for enrichment and use in foreign light water reactors.

- Uranium is used to fuel CANUD nuclear reactors.

- UF₆ is re/refined at Blind River, Ontario, to produce uranium trioxide.

- Uranium mine and mill tailings waste is produced throughout the nuclear fuel cycle and safely managed in licensed storage facilities.

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Governance Framework

**Policy Makers**
- **Federal**
  - Nuclear energy is under federal jurisdiction.
- **Provincial & Territorial**
  - Provinces and territories have ownership over the natural resources and provincial grids that lie within their boundaries.

**National Regulator**
- **Canadian Nuclear Safety Commission**
  - Regulates the use of nuclear energy and materials to protect health, safety, security and the environment; to implement Canada’s international commitments on the peaceful use of nuclear energy; and to disseminate objective scientific, technical and regulatory information to the public.
  - The CNSC is an independent administrative tribunal set up at arm’s length from government.

**Nuclear Sector**
- **Uranium Companies**
- **Nuclear Energy Producers**
- **Nuclear Science & Technology**
- **Nuclear Supply Chain**
  - A number of companies stretching along the Quebec City-Windsor Corridor and in other locations across Canada

**Key Federal Legislation**
- Nuclear Safety and Control Act
- Nuclear Fuel Waste Act
- Nuclear Liability and Compensation Act
- Nuclear Energy Act
- Export and Import Permits Act

**Key Policies**
- Natural Resources
  - Canada is the lead department on behalf of the Minister of Natural Resources.
  - Other federal departments also contribute to policy development.
- Uranium
  - Nuclear Energy
  - Nuclear Research and Development and Science and Technology
  - Civil Nuclear Liability
  - Radioactive Waste Management

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**Key Policies**
- Canadian’s 1996 Policy Framework on Radioactive Waste
- Nuclear Non-Proliferation Policy
- Non-Resident Ownership Policy in the uranium mining sector

**Provinces choose approaches and technologies for electricity generation based on their natural endowments and regional requirements.**