CANDU SMR:
The Original Canadian Solution

The CANDU® Small Modular Reactor (SMR) is the only all-Canadian – and most mature – SMR design available today to help the Government of Canada reach its goal of Net Zero by 2050. Built on proven Canadian technology, this quickly-deployable 300 MW(e) reactor features simplified systems, fewer components and a modular design. This allows it to provide low-cost, low-carbon power with a high capacity factor in a compact layout.

Proudly made in Canada

CANDU reactors have an impressive supply chain that draws on the technical expertise of hundreds of sophisticated Canadian companies whose products and services are specifically designed to support this technology. From fuel mining and processing to nuclear-grade fabrication, component supply, tooling design and software development to nuclear construction, operations and eventually end-of-life and waste management, the Canadian supply chain is robust and ready to support the development and rollout of a new CANDU SMR.

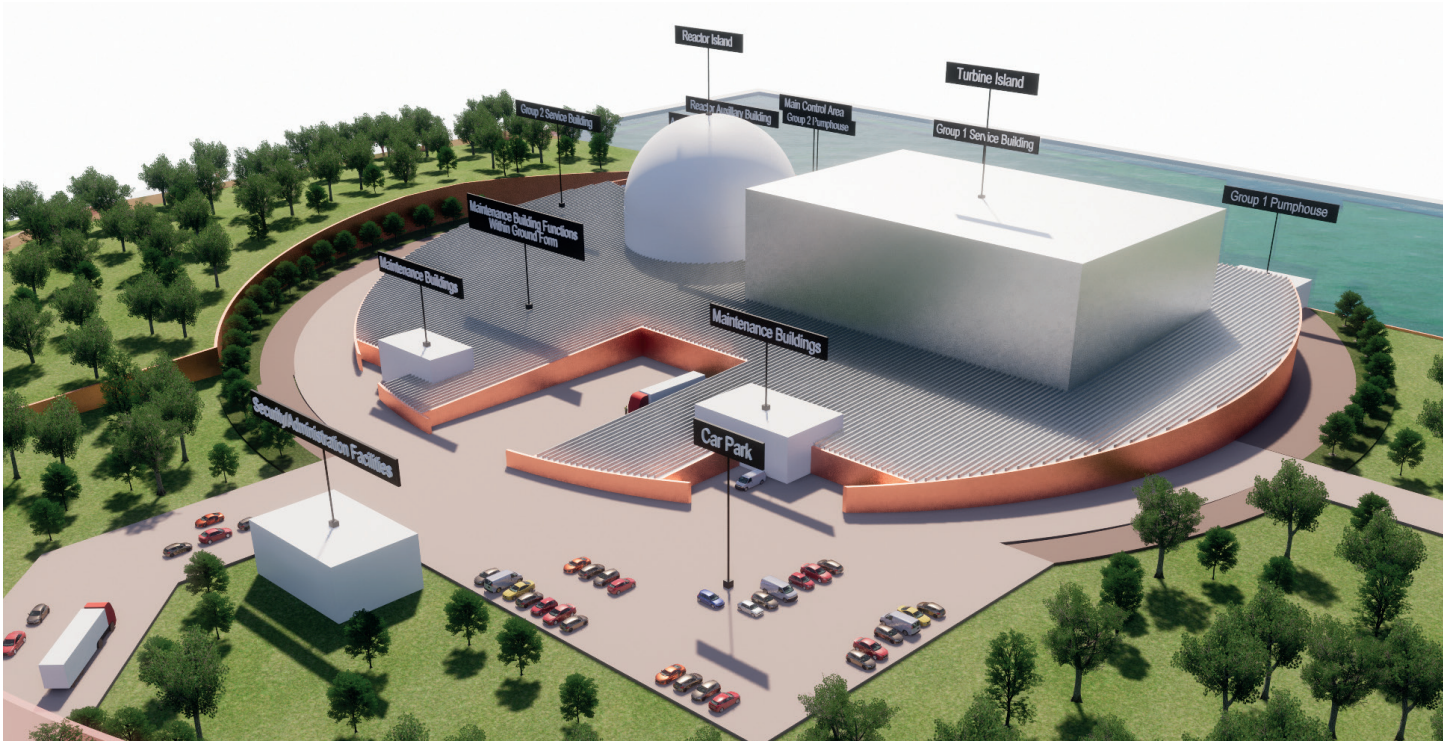
Unlike any other technology, SNC-Lavalin's new CANDU SMR will energize this made-in-Canada supply chain. Done right, the development of and investment in this national sustainability project will stay in-country. Minimal retooling or retraining by the supply chain means more rapid deployment and quicker ramp-up than a new technology would require.

Readiness and licensability

The CANDU SMR is a Generation III+ reactor based on a decades-long proven design that is licensed throughout the world and in Canada. It meets modern regulatory requirements, with dedicated post-Fukushima features.

Over one million person-hours have been invested into this design, vaulting the CANDU SMR ahead of most other SMR vendors. The Canadian Nuclear Safety Commission is very familiar with CANDU designs, including through multiple Vendor Design Reviews. This knowledge and experience can be leveraged in review of the CANDU SMR to improve efficiency and enhance confidence in the successful outcome of the review.

A CANDU SMR will use domestic natural uranium fuel, mined and processed by Canadian companies and readily available and licensed for use in Canada.



Finally, used fuel from the CANDU SMR is compliant with the plans underway by the Nuclear Waste Management Organization (NWMO) and faces no new licensing or waste challenges that have not already been solved by Canadians.

Proven CANDU technology, competitive economics

The supply chain has adapted over 50 years of nuclear know-how from more than 30 CANDU reactors currently operating around the world, including an advanced reactor core design, a signature online refuelling capability, and a holistic plant design that incorporates decades of operating and maintenance experience and low unit electrical costs.

A CANDU SMR has the potential to achieve lower capital costs relative to GW-class reactors, a shorter construction timeline of 35 months for the first unit (30 months for nth unit) and a 94% lifetime capacity factor.

The last seven CANDU reactors have been built on budget and on or ahead of schedule

Advanced safety features that go above and beyond

The CANDU SMR's many advanced safety features include:

- improved seismic robustness (0.3 g)
- higher pressure, lower leakage steel-lined containment
- advanced digital control systems
- improved shutdown system responsiveness and reliability in providing safety functions
- improved grouping and separation to protect against events like earthquakes
- post-Fukushima design improvements
- reduced technical risk through maximum use of proven systems and components
- optimized modular construction
- enhanced separation of safety systems

Economic stimulus, low-carbon power, domestic & international opportunities

A CANDU SMR brings the biggest impact for the Canadian investment dollar with a fast deployment schedule using proven technology, maintaining Canada's energy independence by using natural uranium fuel from existing Canadian fuel manufacturers, and avoiding the need for shipments of enriched uranium fuel into and across Canada. This maximizes utilization of the existing high performing Canadian supply chain, minimizing project delivery risk and supporting good-paying high technology jobs in Canada.

Canada has already demonstrated that it is possible to export CANDU nuclear technology globally. With the CANDU SMR, Canada can provide a smaller and more flexible source of carbon-free electricity not just domestically, but to the world.

CANDU SMR Benefits

- Mature Canadian supply chain ready to go for a new CANDU
- CNSC very familiar with CANDU technology
- Nuclear fuel available in Canada; no need to import enriched fuel.
- Canadian Nuclear Laboratories can support the technology, allowing for a boost in their platform
- Canada's nuclear waste program (characterization, sorting, processing and storing) is already geared for CANDU operations.
- Operators very familiar with CANDU; O&M staff comfortable with technology
- Provides additional capability for medical isotope production
- Can be shovel ready by 2023
- All Canadian solution

100% Canadian

Advanced design:
1.3M hours
of effort to date

Shovel-ready by
2023

Short build of
30-35
months

Export opportunities

www.snclavalin.com

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