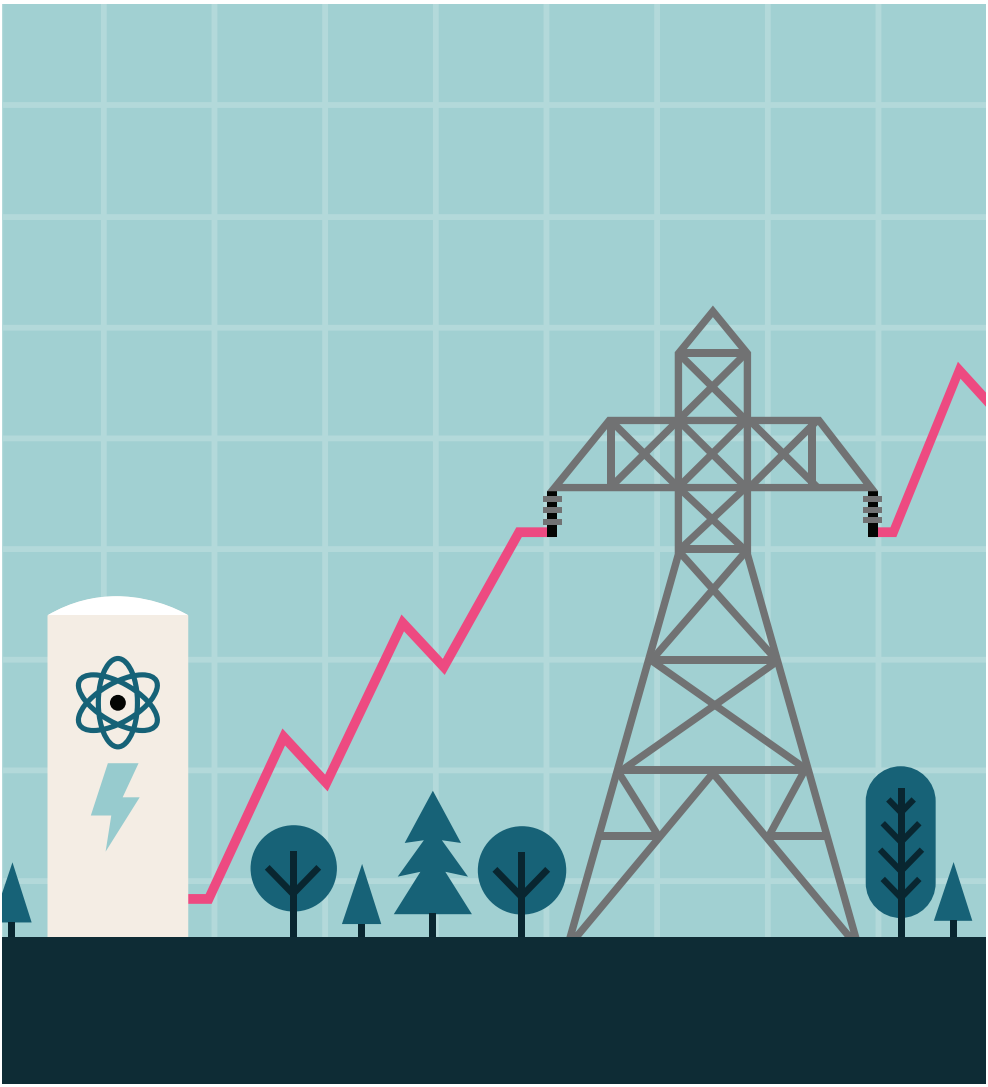
Nuclear Powerhouse

A playbook to unlock Canada's SMR advantage

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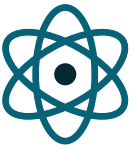
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Report at a Glance

Canada is entering a decisive moment for nuclear energy. With the first grid-connected SMR in the G7 under construction and global competition intensifying, **Canada has a head start—but its first-mover advantage is fragile.** This report applies the *Build Big Things* four-point framework to show what is needed to move SMRs to the final investment decision and deployment at scale.

CANADA'S NUCLEAR ECONOMIC ADVANTAGE

~89,000
jobs nationwide

>$22 billion
annually contributed to GDP

~89%
high-skill jobs

CHAPTER 1

Canada enters the SMR race as a Tier-1 nuclear nation, with a complete value chain spanning uranium, fuel, operations, regulation and waste management. The Darlington SMR places Canada years ahead of competing designs, creating a rare opportunity to anchor domestic supply chains and capture emerging export markets. Scaling up now positions SMRs as a pillar of industrial growth, grid reliability and global competitiveness.

CHAPTER 2

SMRs face high upfront costs, long timelines and first-of-a-kind risk. This chapter shows how co-ordinated public financing, efficient regulation, enabling infrastructure and early Indigenous economic participation can lower the cost of capital, crowd in private investment and turn one-off projects into repeatable fleets.

CHAPTER 3

Governments have a vital role to play in de-risking projects. There are seven concrete actions governments can take to move from opportunity to delivery — aligning financing, regulation, Indigenous economic participation, and enabling infrastructure to position Canada as a global SMR deployment and supply-chain leader.

Introduction: A New Nuclear Age in Canada

In October 2025, the Canada Growth Fund and the Ontario government's Build Ontario Fund came together to announce their joint commitment of $3 billion to fund the development of four small modular reactors (SMRs) at the Darlington New Nuclear Project.[1]

The announcement confirmed what any rubbernecker driving past the site on Hwy. 401 east of Toronto could tell you — construction of the next generation of nuclear power is well underway in Canada. The first of these four planned SMRs is now being built, and the project is on track to begin feeding 300 megawatts (MW) of emissions-free power to Ontario's grid by 2030. When it does, it will be the first grid-connected SMR in the G7 and the only fully operational plant of its kind outside China and Russia.

Canada's first SMR project is marching toward completion at a dynamic time for the nuclear energy industry around the world. The number of power plants currently under construction has reached one of its highest levels in 35 years[2], and there is mounting interest in harnessing more nuclear technology to meet growing energy demand and achieve climate goals. This new nuclear wave is particularly focused on SMRs — reactors that are smaller in scale than existing nuclear facilities, with the potential for duplication or fleet-scale production to greatly reduce the time and costs involved in bringing new nuclear plants online.

Canada is in an enviable position as this wave builds. The new Darlington reactor is a first-of-its-kind project, and it gives Canada the significant strategic advantage of first-mover status. Canada is also one of only a handful of countries in the world with Tier-1 status — an acknowledgement that it is home to a mature, full-spectrum nuclear industry, from the "natural advantage" of its vast uranium reserves, to the fleet of CANDU reactors generating electricity across Canada and internationally, to its world leadership in the production of nuclear isotopes for medical use. Canada has been a central player in every aspect of the nuclear energy industry for generations, boasting decades of home-grown technological innovation, strong public investment, safe operations and a robust policy and research ecosystem.

Nuclear projects come with a mix of challenges. These include high levels of risk and uncertainty, long project timelines, and a regulatory and safety regime oriented much more toward maintenance and oversight than innovation and new construction. Overcoming these obstacles will be crucial if Canada is to take full advantage of its first-mover status and encourage follow-on projects across the country. To do so, Canada will need to move faster than ever before to advance new nuclear projects to final investment decision (FID) and get them approved and built.

The Public Policy Forum's ***Build Big Things report*** [3] has established a four-point policy framework to guide policymakers in providing the vital support SMRs need: co-ordinated financing; efficient regulations; enabling infrastructure; and Indigenous partnerships. This report fine-tunes the *Build Big Things* framework to address the specific issues SMRs will face, providing concrete, actionable recommendations to advance SMR projects to FID.

Canada will get only one shot at taking full advantage of its enviable first-mover position in the SMR race. This playbook is designed to help make sure that shot hits its target.



TERMINOLOGY NOTE

The wave of renewed interest in the nuclear sector is not limited to SMR technology and the industry sometimes employs the phrase "new nuclear" to encompass the full scope of new proposals. Though much of the analysis and many of the recommendations in this report would apply to new nuclear projects generally, we have maintained a focus on SMRs (reactors of 300 MW or smaller) and use that term throughout for the sake of clarity and consistency.

Part One: Canada's SMR Advantage

THE NEW NUCLEAR WAVE

After more than a generation of stagnation, the global nuclear industry has awakened. With rising electricity demand worldwide and the boom in artificial intelligence (AI) and other digital tools promising to push it even higher, the global hunt for clean power sources has already produced a wave of major new investments in nuclear projects. As the International Energy Agency (IEA) noted in a **recent report**: "The market, technology and policy foundations are in place for a new era of growth in nuclear energy over the coming decades."[4]

There are at least 63 conventional nuclear reactors in development worldwide, and steps are being taken to extend the life of more than 60 up-and-running reactors (accounting for 15 percent of the world's current nuclear fleet). The scenarios modelled in the IEA's report on this "new era for nuclear" anticipate that global nuclear capacity will increase by anywhere from 50 percent to more than 140 percent by 2050, depending on how aggressively climate goals are pursued worldwide, and this expansion will require between US$1.7 trillion and US$2.9 trillion in cumulative investment. At present, however, this new wave of nuclear growth is heavily concentrated in China and Russia, where nearly all new nuclear plants under construction are located.

The new horizon for the nuclear business dawns on a rapidly shifting energy landscape in Canada. Grids will need to significantly expand their generating capacity to meet mounting demand from population growth, the electrification of transport, heating and many other energy needs, and the rapidly expanding requirements of AI and other electricity-hungry tech-sector applications. At the same time, renewable energy continues to decline in price, and stand-alone storage technology is rapidly improving (and becoming more affordable as well).

Canada's history with nuclear energy runs as deep and broad as anywhere in the world. The CANDU reactor has a strong record of safe, reliable service from Ontario and New Brunswick to Argentina and South Korea. Canada's uranium deposits are the third largest in the world and have been feeding the industry worldwide for decades — a "natural advantage" alongside its first-mover advantage in the SMR game. And Canada is home to an established workforce, trained expertise and research community to enable it to take a leading position in the emerging wave of new nuclear development.

But the course for the country's nuclear industry must be chosen carefully, with a focus on technologies and projects with the best chance of success. This isn't just a question of reactor size or technology but a matter of which projects can get to FID, generate clean power, and deliver other economic benefits, including job creation and long-term GDP gains. Options range from conventional large-scale reactors like the CANDU fleet to SMRs like the one now being built at Darlington, as well as next-generation micro-scale SMRs for remote and off-grid applications and high-temperature reactors for industrial decarbonization. The best approach is to consider every tool in the nuclear toolbox.

THE STATE OF PLAY IN THE SMR GAME IN CANADA AND BEYOND

Because SMRs have the potential to provide faster, more cost-effective and more flexible nuclear power, proposals for SMR projects are attracting significant attention and investment in this new phase for the industry as a whole. SMRs are reactors that generate around 300 MW (megawatt) or less, compared to the typical conventional nuclear facility at the scale of 1,000 MW or more. There are more than 100 SMR designs in the works worldwide, including what the IEA describes as "plans of varying maturity" to build out up to 25 gigawatts (GW) of generating power.[5]

CANADA'S NUCLEAR INDUSTRY BY THE NUMBERS

Ernest Rutherford arrived at McGill University in 1898 to study radioactivity — work that eventually earned him a Nobel Prize — and Canada has been at the forefront of the global nuclear energy industry ever since. Here is a statistical snapshot of the Canadian nuclear industry today:

Current annual revenue of the Canadian nuclear industry:
more than $6 billion[6]

Current GDP impact:
$22 billion per year

Current installed electricity generating capacity:
14.6 gigawatts

Share of Canadian electricity generated by nuclear power (as of 2021):
14 percent[7]

Current employment:
89,000 direct and indirect jobs

Increase in overall employment in the last five years:
17 percent

Carbon dioxide emissions avoided annually by nuclear energy use:
80 million tonnes[8]

Share of the world's cobalt-60 isotopes (used in cancer treatment and other medical applications) produced in Canada:
50 percent

Share of the world's uranium produced in Canada (the world's No. 2 producer):
15 percent[9]

This includes interest and investment from a range of major tech companies such as Amazon, Microsoft and Google, which are looking to secure clean, firm power for their rapidly expanding data centres and AI development.

Canada's first foray into SMR development is charging ahead into this gap between mounting interest and on-the-ground results as the only commercial-scale SMR project now underway in the Western Hemisphere that is currently on track to begin operating by 2030. The full Darlington New Nuclear Project involves building four BWRX-300 reactors (designed by GE Vernova Hitachi Nuclear Energy), a **$20.9-billion overall investment**[10] with a combined output of more than 1,200 MW. At present, only one of these units is under construction, at an estimated total cost of $6.1 billion. Ontario Power Generation (OPG) intends to use this first reactor as a model for future SMR development at the same site and beyond, with initial financing in place for three more of the same reactors and a planned completion date in the mid-2030s.

The Canadian nuclear industry has also seen **significant SMR development activity**[11] in recent years beyond the Darlington SMR project. OPG and Bruce Power are already considering SMR projects on three other sites across Ontario. The New Brunswick government, meanwhile, has invested $30 million in the development of an advanced SMR at demonstration scale as part of the proposed expansion of the existing nuclear site at Point Lepreau, and SMRs are being considered by governments and utilities across Western Canada.

The federal government has also signalled its interest in boosting the development of next-generation nuclear technology, beginning with its 2018 ***Canadian SMR Roadmap***,[12] which outlined three streams for Canadian SMR development: grid-scale SMRs like the Darlington project; SMRs for decarbonizing heavy industry; and micro-reactors to replace diesel generators in remote communities. To date, only the first stream has progressed significantly. The federal government has recently provided further support by including Darlington's SMR project among the projects under consideration for the **Major Projects Office**[13] project list.

At the provincial level, Saskatchewan, Ontario and New Brunswick **signed** a joint memorandum of understanding (MOU) on the deployment of SMRs in all three provinces in 2019.[14] SaskPower in Saskatchewan has since indicated a strong interest in building the same BWRX-300 model of SMR now under construction at Darlington; the utility

has identified two potential sites for the reactor and has begun engaging with the relevant First Nations ahead of a final decision that has been promised by 2029. SaskPower has also signed an MOU[15] with the Saskatchewan First Nations Resource Centre of Excellence to explore opportunities to collaborate on future energy projects (including the proposed SMR project). Next door in Alberta, the provincial government signed on to the existing MOU on SMR deployment with the other provinces in 2021 and is now in the "exploratory stages" of plans to introduce nuclear power into its future energy mix.

Canada's initial push into SMR development, though measured in pace, has been enough to secure first-mover status worldwide. And the plans already emerging for further developments promise to build on this achievement. The joint investments by the Canada Growth Fund and Build Ontario Fund, for example, include equity investments in three further SMRs, contingent on the progress made with the Darlington SMR already under construction. The federal government has also been providing targeted support for SMR development[16] — most recently in the 2025 federal budget, which improved financing for SMRs by boosting funding for the Canada Infrastructure Bank and providing access to the Clean Electricity Investment Tax Credits. (The federal government has signalled its intention to release a renewed strategic policy for new nuclear energy in 2026).

Canada's head start is not enough on its own, however, to guarantee long-term leadership. A recent Clean Prosperity report notes that aside from the first Darlington reactor, "nuclear capacity additions before 2035 are unlikely."[17] This puts Canada's first-mover position at risk — and could cause problems for the country's clean energy needs beyond 2035.

THE BUSINESS CASE FOR CANADA'S SMR EXPANSION

Canada is uniquely positioned today to take a leadership role in the global SMR race. OPG's trailblazing Darlington SMR project represents more than just a milestone — it could be a springboard. It provides a real-world model for future development and the momentum to scale up a co-ordinated, pan-Canadian strategy for unlocking investment in SMR projects. Doing so, however, will take sustained, co-ordinated policy support and investment from multiple levels of government across the country.

The business case for investing in an expansive wave of SMR development begins with baseline domestic needs — SMRs are regarded as a crucial tool for meeting Canada's own electricity demand in the coming decades. Recent modelling by Navius Research (**commissioned by Clean Prosperity** for its 2025 report *Nuclear Nation Building*[18]) found that the two "key drivers of nuclear adoption" will be capital cost reductions stemming from the SMR learning curve and Canada's commitment to "deep electrification" — the increasing reliance on electricity for transportation, heating and cooling, industrial processes, and other needs currently met by other fuel sources. While the Clean Prosperity study estimates renewable energy — predominantly wind, solar and battery storage — will meet much of this new demand before 2035, SMRs could be a vital tool for clean electricity generation after 2035 if the cost of building new reactors declines as expected.

A recent study by the RBC Climate Action Institute[19] estimates Canada would need 85 SMRs by 2050 to meet its net-zero target, which would require a dedicated workforce averaging more than 5,000 skilled workers and which would position nuclear power as Canada's fifth-largest source of electricity at mid-century.

Research by the Canadian Nuclear Association (CNA) estimates that Canada will need 150 GW of additional "firm generation" by 2050 to meet demand growth from electrification, population growth and new industrial and high-tech demand.[20] The CNA foresees three broad scenarios for the overall nuclear industry's expansion by 2050 to help address this growth: a "low-build" scenario of 17 GW, mostly from projects already announced; a "medium-build" scenario of 37 GW, with new provincial jurisdictions entering the nuclear market in the 2040s; and a "high-build" scenario of 51 GW, which would require new nuclear additions at the rate of 4 GW per year by 2040. (The CNA's report does not specify how much of this growth it expects to be accounted for by SMRs alone.) The federal government's ***Canadian SMR Roadmap***[21] estimated that the global SMR industry could be worth $150 billion by 2040, with Canada as a major player. The IEA, meanwhile, **forecasts a range** of growth scenarios for the global SMR market, yielding outcomes by 2050 from 40 GW of global SMR production under current policies to 120 GW with "tailored" policies.[22]

The case for SMR investment extends beyond simply bringing emissions-free electricity onto grids to meet new demand. Canada's

first-mover status means there are major advantages to investing aggressively now to capitalize on opportunities currently on offer that could be snatched up by other jurisdictions if Canada is too slow to act. Their smaller size and versatility make SMRs attractive to electricity markets where large-scale reactors cannot be readily financed or easily incorporated — this includes both areas of lower population such as Western Canada and many advanced western economies where electricity use has begun to trend upward after a long period of mostly stagnant demand.

Canada has many of the assets in place to build on its first-mover status. These include: a world-class nuclear industry already up and running; a well-established and successful regulatory and safety regime; thorough plans and substantial investments in addressing nuclear waste; world leadership in uranium production from the world's largest uranium basin; a substantial pool of skilled labour; and a stellar track record of research expertise. Few of the countries worldwide that have begun investing in SMR development have all these elements in place. And still further advantages will accrue to Canada's nuclear industry through the research, design and construction expertise gained at Darlington's first SMR project, including a skilled labour force and valuable experience throughout the supply chain to reduce costs on subsequent SMR development.

To get these projects to FID faster and take full advantage of these opportunities, project proponents, regulators and governments at both the federal and provincial level will need to work together. Collaborative planning is vital to secure the right financing and de-risk future SMR projects to make them attractive to investors and to harness the full "nation-building" potential of this technology.

This begins with technology choices. The Darlington SMR project relies on a reactor built by GE Vernova Hitachi Nuclear Energy, based on a proven design developed in the United States and Japan. This places inherent limits on the intellectual property benefits that can accrue to Canadian partners in this and future projects using the same technology internationally; GE Vernova Hitachi has recently entered a strategic alliance with the South Korean firm Samsung C&T to develop SMRs around the world. A "fleet approach" to SMR projects across Canada relying on the BWRX-300 design would still provide Canadian industries and governments with expertise and competitive advantages throughout the supply chain

that would add value to future SMR projects domestically and internationally. By investing first in the BWRX-300 technology at commercial scale, OPG has placed itself several years ahead of any other SMR design in the development process and offers the quickest trip through the learning curve for future SMR projects, reducing costs and risks.

The bulk of the supply chain (including all civil works) and the majority of the money spent for the Darlington SMR project will be in Canada, and Canadian firms will still be in strong positions to participate in future BWRX-300 projects around the world as GE Vernova Hitachi rolls out its ambitious plans for expansion in the years ahead. Individual components and enabling technologies being developed in the Canadian supply chain will have intellectual property associated with them, and this is the primary value of Canada's first-mover advantage at present. This experience and know-how has the potential to fuel the growth of a domestic SMR sector by both using these components domestically and exporting them to global markets that choose the same reactors for future projects. A fleet approach — developing multiple projects that employ the same technology and design — is critical to embed the manufacturing and construction processes deeply in the Canadian economy to achieve economies of scale, to make the domestic SMR industry economical, and to establish a long-term competitive advantage for export markets.

As Canada makes further investments in new nuclear technology, similar considerations should be given to planning regarding fuel and supply chains for advanced SMR designs. And policies to accelerate SMR projects will need to be co-ordinated with larger goals of deep electrification to make the strongest long-term case for SMRs as a cost-effective technology for clean power generation.

Some significant steps have already been taken to position Canada for success and build on its first-mover advantage. The need, the opportunity and the necessary engagement are all in place. What is required now is a strategy to accelerate these plans and get more SMR projects to FID. This is where PPF's *Build Big Things* policy framework comes in.

Part Two: SMRs in the *Build Big Things* Policy Framework

The *Build Big Things* framework is formulated to do more than simply enable any single SMR project to FID faster. Its intent is to help identify broader national goals for SMRs and help expand an industry in the national interest.

This framework rests on four pillars: co-ordinated financing; efficient and effective regulations; enabling critical infrastructure; and increasing Indigenous economic participation. Taken together, policy actions in these areas will enable SMR projects to reach FID faster and provide a practical roadmap to accelerate SMR deployment both at home and abroad.

Each of the four pillars addresses critical aspects of the larger structure needed to support Canada's emerging SMR industry. Let's examine each in turn.



PILLAR NO. 1: CO-ORDINATED FINANCING

Building an SMR is a complex, capital-intensive process working on a long time horizon with relatively new (currently first-of-a-kind) technology. These projects have unique financing requirements and understanding the policy and funding supports needed for each project will be critical in getting them to FID faster.

The funding needs for the expansion of SMRs in Canada is significant, **requiring capital investment** of an estimated $9 to $20 billion per year[23] by the 2030s to expand Canada's

industry to the necessary scale to meet rising demand and climate goals. Substantial financing tools are already in place at the federal and provincial levels — the Canada Infrastructure Bank played a crucial role in the early stages of the first SMR development at Darlington with a $970-million investment, and investment tax credits have been useful tools to move that project toward FID. But these tools can be hard to navigate and are insufficient at present to boost investor confidence. They have not been tailored to the needs and extended project timeline of SMRs and involve navigating an alphabet soup of federal funds and programs.

Innovative approaches to financing nuclear projects internationally offer Canadian policymakers some guidance for how to improve SMR project financing. The **Sizewell C project** in the U.K.[24] (a large-scale nuclear power plant) provides a particularly strong example of how a government can boost investor confidence by insuring a project against major risks and becoming the project's lender of last resort to help a project secure investment, rather than simply providing funding up front. (For more details on the Sizewell C project's financing model, see the sidebar on page 21, below.) Other examples of financing approaches that have been used for energy projects of similar scale include contracts for difference, capital work in progress incentives and first loss protection.

To usher in a broader wave of SMR development, governments can take on two vital financing roles — reducing capital costs and de-risking projects — to reassure investors of the viability of projects and instill confidence that returns on investment will be sufficient. Different kinds of support will be necessary in each of the three phases of an SMR project: the pre-development phase leading to FID; the construction phase; and the operational phase. Funding and other financial assistance are particularly vital in the first and second stages of an SMR project, when proponents face significant costs amid the highest risks, while revenue streams to offset project costs remain furthest in the future.



…the strongest case for ambitious expansion of Canada's SMR fleet is made by committing to "deep electrification" of transport, building heating and cooling, and industrial processes using clean energy.

Governments can assist in reducing capital costs through targeted direct investment and funding to assist with developing and securing supply chains, as well as measures in trade agreements to improve access to fuel supplies and bolster mining activities vital to SMR development and operations. Nuclear projects also present opportunities for public-private partnerships (which would potentially require careful co-ordination of multiple levels of government, industry and academia), and Canada's pension funds could be approached as potential investment partners as well.

Perhaps the most vital role for governments in SMR project financing — and the one that governments alone can provide — is to assist in reducing project risks. De-risking SMR projects serves both to make the projects viable and eventually to make them more attractive for private investment. Private investment is growing more critical for new nuclear projects as government budgets face spending constraints, but private capital faces significant barriers due to the high risks posed by regulations, costs and uncertainties around construction timelines and future revenues.

The nuclear industry involves levels of risk and uncertainty in terms of costs and potential liabilities that oblige governments to take a vital "backstop" role — a role that is especially important in the long pre-development phase for SMRs. (The costs for a nuclear project in its early pre-development phase of impact assessment and technology and site selection alone can run to hundreds of millions of dollars.) Governments should strive to strike a balance between providing sufficient incentives for investors and capping risks so that eventual returns are reasonable and reliable. Beyond this backstop role, governments can provide vital support through measures that fund the riskiest early phases of projects, as well as providing direct equity participation and low-interest loans.

Co-ordinating financing for SMRs extends beyond the power plant itself. There are investment opportunities throughout the value chain, and capital needs spanning the entire nuclear fuel cycle, from mining and operations to waste management and decommissioning. Supply-chain investments can provide lower-risk entry points for private investors.

PILLAR NO. 2: EFFICIENT AND EFFECTIVE REGULATIONS

Governments won't need to start from scratch to regulate SMRs, even in those jurisdictions that have never hosted a nuclear power plant. Canada's nuclear industry is already a carefully regulated sector with a stellar track record for reliability and safety. The federally managed Canadian Nuclear Safety Commission (CNSC) oversees a stringent regulatory framework for nuclear operations with the highest safety standards, which will continue to provide regulatory guidance for new SMR projects. Changes to the regulatory framework to accommodate new nuclear projects should aim for targeted corrections rather than a major overhaul.

Canada's strong track record for safe nuclear operations means that commissioning a new nuclear plant requires navigating a thorough and complex approval process, which — though necessary to ensure public safety and confidence — can lengthen project timelines, increase costs and amplify risks. OPG's first Darlington SMR development had the advantage of building on a site already approved for nuclear power, but it still faced significant regulatory hurdles, including thorough environmental assessments and public consultations. In other provinces, such as Alberta and Saskatchewan, with no prior experience overseeing nuclear operations, navigating regulatory frameworks could be even more challenging.

The federal government's 2018 SMR Roadmap was the first government initiative to address the specific needs of new SMR projects; a 2021 SMR feasibility study commissioned by electricity utilities found that this initial roadmap was "seen across the world as an example of how to proceed with new SMR development."[25] Since then, the federal government followed this up with a 2020 Action Plan, as well as directed investment tax credits, $13.6 million in research funding, and a $500-million backstop for fuel supplies in 2024.[26] The industry is awaiting an update on the action plan with greater detail regarding SMR-specific regulations.

A reboot of the federal strategy for the industry provides an opportunity to reinvigorate Canada's research on micro-reactors, which has already shown some promising early results at Chalk River Laboratories; micro-SMRs have particularly strong potential in the long term as tools to assist with energy security and Arctic sovereignty. An updated action plan could also initiate investigations into Canada's potential to extend its role in the nuclear fuel cycle into enrichment activities.

Despite their smaller size and potentially faster construction, SMR developments still come with long timelines. Keeping these as tight as possible will require regulatory clarity and meticulous advance planning. The Ontario government's existing policies — including Powering Ontario's Growth and the Integrated Energy Plan — provide a strong example of how to initiate planning well in advance. Nuclear deployment timelines also must be carefully co-ordinated with projected demand and grid planning to ensure that new generating capacity will come online when it is most needed to guarantee reliability and reduce the costs of new nuclear power as much as possible. In most deployment situations, SMRs are likely to serve as firm power, so long-term planning must also address their limited flexibility compared to some other generation types.

Careful advance planning by project proponents can also assist with keeping timelines as short as possible, especially during the pre-development phase when an application is being assessed for environmental and other impacts. The federal government's Impact Assessment Agency (IAAC) has found that the path to approval can be made smoother by identifying potential problems early, providing high-quality information, and establishing meaningful relationships with Indigenous partners well in advance.

The federal government has also taken steps to improve regulatory co-ordination and reduce duplication in project reviews. In 2024, the CNSC and the IAAC entered into a memorandum of understanding to better co-ordinate their respective roles in impact assessment for nuclear projects. The MOU is intended to improve information sharing and align timelines, while preserving each organization's statutory responsibilities. This is an important step forward, but it is administrative and non-binding, and it does not eliminate parallel mandates and multiple decision-makers in the review process. Accelerating the path of major projects to FID and establishing a "one project, one review, one decision" framework to reduce timelines from three years to two will require more durable, structural reforms.

As governments consider future SMR projects, they will need to co-ordinate these plans with other energy policy goals and priorities. SMRs have a potentially vital role to play in expanding electrification and pursuing net-zero emissions goals. As Clean Prosperity's ***Nuclear Nation Building*** **report** has determined, the strongest case for ambitious expansion of Canada's SMR fleet is made by committing to "deep electrification" of transport, building heating and cooling, and industrial processes using clean energy.[27]



SIZEWELL C: A REGULATORY FRAMEWORK CASE STUDY

The Sizewell C project is a $70-billion conventional nuclear power plant now under construction in the United Kingdom. The project recently completed its journey to FID and provides a useful example of how a government can sufficiently de-risk a nuclear project and line up the capital stack to ensure it gets built.

The British government used a regulated asset base (RAB) funding model and took a 45 percent stake in the project. This approach assured investors that a revenue stream would be available to them from the beginning of the construction phase, a fixed rate of return was guaranteed, and a hard cap on cost overruns would backstop their investments. This successfully de-risked the project, which has seen equity stakes taken by Canada's La Caisse de dépôt et placement du Québec (20 percent), Centrica (15 percent), Amber Infrastructure (7.5 percent), and France's EDF (12.5 percent).

The Sizewell C project provides valuable lessons for Canadian governments on how to structure capital stacks, align public and private incentives, and crowd in institutional investors to accelerate the deployment of next-generation nuclear technologies, including SMRs. The equity participation of Quebec's pension fund also sends a clear signal that institutional investors in Canada will invest in nuclear projects under the right conditions.

Sizewell C's RAB model also underscores the challenge presented in Canada by differences in energy regulations and markets from province to province — such an approach would definitely not be equally effective in every jurisdiction in Canada. And even the project's success in getting to FID underscores the complexity of nuclear project financing, serving more as a set of varied lessons than a replicable model. Even in the U.K., it would be very difficult to duplicate Sizewell C's approach on a new nuclear project today.[28]

Strong confidence in Canada's long-term energy and electrification goals is vital to provide the investment certainty new SMRs will require. With careful long-term planning, SMRs can also serve as valuable hedges against future grid constraints.

The federal government has implicitly recognized this need for long-term policy co-ordination by referring projects of national interest to the Major Projects Office (MPO), which is also considering projects involving stronger interprovincial electricity grid interties, critical mineral mining for clean energy technology, and major renewable energy projects alongside SMRs. The MPO's current project criteria, however, appear to shut out future SMR developments by obliging projects to have financing more fully in place than a new SMR project would likely be able to achieve at the point where it would most benefit from the MPO's intervention.

Beyond energy goals, regulations for SMR growth should align with established expertise in Canada's nuclear regulatory regime, co-ordinate with the IAAC's Indigenous Advisory Committee, and explicitly address interprovincial differences in electricity regulation, planning and pricing. Establishing a fully secure nuclear chain will also require cross-border collaboration with the United States — a complex task in the current political environment.



PILLAR NO. 3: ENABLING CRITICAL INFRASTRUCTURE

Canada's future energy mix may include a fleet of grid-connected SMRs, stand-alone SMRs built for far-flung industrial operations, micro-scale SMRs for remote communities, or all of these. The infrastructure to support these projects could include new transmission lines, waste storage facilities and other unique infrastructure needs for remote, off-grid or industrial applications. Careful advance planning for each project's infrastructure needs and co-ordinating these new facilities with existing plans for long-term nuclear waste management will be vital for the successful expansion of Canada's SMR fleet.

Planning the necessary electricity transmission infrastructure well in advance of SMR project completion is often important to keep electricity costs as low as possible and ensure efficient delivery of new power output to where it is most needed. For some projects this may involve the construction of new transmission lines, but siting nuclear

projects near areas of high demand (such as cities or large industrial facilities) can often be a more cost-effective approach.

Future SMR projects can leverage Ontario's mature nuclear supply chain and skilled workforce to provide strong foundations for SMR deployment. As the number of Canadian SMR projects expands to new jurisdictions, however, governments can maximize their opportunities to build out cross-Canada supply chains and create local and regional job markets in the nuclear industry through careful advance planning. Identifying labour requirements and investing in training and re-skilling can be especially useful to ensure the SMR industry has the expertise it needs to secure efficient construction and operations.

Responsible nuclear waste management will also be vital to ensure public acceptance of new SMR projects. Canada's Nuclear Waste Management Organization (NWMO) has already established itself as a global leader through its consent-based approach, selecting Wabigoon Lake Ojibway Nation and the Township of Ignace in 2024 as hosts for the country's first deep geological repository after 14 years of technical studies and Indigenous engagement. NWMO's launch of a second two-year engagement process in 2025 further reinforces Canada's leadership and strengthens the social licence needed for SMR deployment. NWMO's consent-based siting process and management framework provides a model for aligning community interests with project goals, reducing social and regulatory risks that could delay FID for SMR projects. Ontario also has guarantees in place for decommissioning obligations through the Ontario Nuclear Funds Agreement.

New SMR projects can use the NWMO as a model, but they will need to plan well in advance for their own waste management needs. This involves not only securing long-term waste storage but also addressing short-term storage and transport — infrastructure that has long been in place for Ontario's established nuclear fleet but that will need to be assembled from scratch for new projects.



PILLAR NO. 4: INDIGENOUS ECONOMIC PARTICIPATION

The *Build Big Things* report recognized that meaningful Indigenous economic participation is essential for the success of major energy projects such as SMRs in Canada. A potential wave of investment in SMR development across the country presents a strong opportunity for First Nations and Indigenous

Though all recognize the urgent need to provide education, improve engagement and enhance capacity-building, there is at present a significant void in terms of leadership.

communities to become equity investors and reap significant long-term economic benefits, including stable long-term employment opportunities in their communities.

Accessing these opportunities, however, will require early and continuous support from governments and industry alike, as SMR development presents unique challenges of scale and budget for First Nations and other Indigenous partners. Interest in SMRs is strong in many Indigenous communities — particularly those still reliant on diesel fuel for power generation — but very few of them have any experience with the nuclear industry, and significant capacity-building will be essential to enable meaningful Indigenous participation. Investing in overcoming these challenges can not only benefit Indigenous partners but improve overall affordability by making the early stages of development more efficient and getting projects to FID faster.

The federal government has introduced several useful measures in recent years to support Indigenous economic participation, including the **Indigenous Loan Guarantee Program**.[29] The 2025 budget doubled the size of this program to $10 billion from $5 billion. The budget also provided substantial new funding for capacity-building in Indigenous communities, including more than $10 million for Crown-Indigenous Relations and Northern Affairs Canada's (CIRNAC) consultation initiative and $40 million for capacity-building activities at Indigenous Services Canada — the latter under the *Building Canada Act*, specifically to support Indigenous participation in major nation-building projects.

Indigenous communities across Canada are currently facing what one report described as a "deluge" of requests from energy and other project proponents for consultation and participation. The capacity of many of these communities to address this level of interest is limited — and requests to participate in SMR projects create additional issues of unfamiliar technology and often unprecedented scale in terms of capital and project size.

Finding ways to establish access to capital at the necessary scale for equity participation by Indigenous communities is a challenge that will require developing innovative approaches to project financing, as well as early and sustained community engagement to educate Indigenous partners on the technology and its benefits and to address the often unequal and unfair history of resource development experienced by

Indigenous communities. SaskPower's current engagement with potential Indigenous partners in its selection of a site for its first SMR may provide a working model for future SMR projects.

Though project proponents, governments and Indigenous communities alike all recognize the urgent need to provide education, improve engagement and enhance capacity-building, there is at present a significant void in terms of leadership. There is no clearly established process to connect the developers, utilities and policymakers involved and provide the navigational supports needed to educate Indigenous communities on the technology and its benefits and risks. First Nations outside Ontario in particular have very little prior knowledge and capacity for nuclear projects, but there is strong interest and motivation in those communities still reliant on expensive diesel fuel trucked in from distant depots. Additionally, ongoing court cases such as the Canadian Nuclear Laboratories vs. Kebaowek First Nation decision regarding nuclear waste storage will likely further transform the dynamic of relations between SMR proponents and Indigenous communities.

Beyond project-by-project engagement, Indigenous leaders have identified the need for a "full spectrum" analysis of the impacts and benefits of SMRs — political, social, economic, environmental and legal — for Indigenous communities. A historic opportunity has emerged to end reliance on diesel, but proponents and policymakers must establish processes to build ongoing relationships, establish trust and overcome concerns in Indigenous communities — particularly those that have already seen significant impacts from nuclear supply chain projects such as uranium mining.

The NWMO has established a consent-based approach to waste management, which could provide a model for aligning Indigenous community interests with project goals and thereby reducing social and regulatory risks that could delay FID for SMR projects.

Part Three: Essential Plays for SMRs in Canada's New Nuclear Future

The business case for a significant expansion of Canada's nuclear power fleet using SMRs is a strong one. Growing demand for clean power is a certainty, and SMRs have a clear role to play in supplying a significant share of that emissions-free electricity.

Canada's established nuclear sector has important advantages, including abundant uranium resources, deep expertise, established capacity for much of the supply chain, and first-mover status in the global industry. These assets can help meet its own electricity needs through a fleet of future SMR projects and leverage its expertise and learning curve to participate profitably in international projects.

But expansion won't happen without strong, steady government support. And that's why Canadian governments need to consider these seven essential plays, built on the core principles we laid out in our *Build Big Things* playbook and tailored specifically to suit the needs of SMR projects.

+ First Play:

Develop a national "new nuclear" strategy that sets a clear long-term vision for SMR deployment in Canada across the full project life cycle.

To maintain Canada's leadership and competitiveness in a rapidly evolving global nuclear market, Natural Resources Canada (NRCan) should develop and implement a national "new nuclear" strategy that establishes clear direction for SMR deployment in Canada and integrates policy, planning, governance and capacity requirements across the full project life cycle. This strategy should be developed in consultation with implicated federal departments, regulators, provincial governments, utilities, the NWMO, project proponents and the broader nuclear and clean energy industries, including reactor vendors, supply-chain manufacturers, Engineering, Procurement and Construction (EPC) firms, fuel-cycle and waste service providers, Indigenous-led enterprises and institutional investors. The strategy should include the following core elements:

1.1 Set clear national objectives and outcomes. Establish a clear goal for SMR growth and define measurable outcomes for deployment, cost reduction through learning and fleet deployment, domestic supply-chain development and Indigenous economic participation.

1.2 Designate SMR development and deployment as a national interest priority and refer projects to the MPO as the federal project co-ordinator, with clear decision-making authority to drive whole-of-government delivery and advance projects to FID within an accelerated two-year timeframe.

1.3 Adopt a fleet-based deployment model for SMR growth, working with OPG, other proponents (including NB Power, Capital Power and SaskPower), and provincial signatories to the SMR memorandum of understanding, to define the best path from the Darlington SMR project to wider adoption that clearly serves the national interest.

1.4 Differentiate deployment pathways by use case. Establish distinct growth streams within the strategy for grid-connected SMRs (similar in scale to the Darlington project) and for micro-scale SMRs serving off-grid

industrial applications (such as mining) and remote communities, including consideration of the role SMRs could play in reducing dependence on diesel fuel in remote Indigenous communities.

1.5 Take a disciplined approach to advanced nuclear technologies for off-grid industrial and remote communities. The federal government should target public support on a small number of candidate technologies, led by NRCan, bringing together provinces and territories, Indigenous rights holders and organizations, utilities, regulators, technology developers, labour, research institutions and the NWMO. This process should assess technologies against objective criteria before advancing projects to demonstration or deployment. Atomic Energy of Canada Limited and Canadian Nuclear Laboratories should be engaged to support this work.

1.6 Embed standardization across SMR deployment. As part of the national new nuclear strategy, drive standardization of SMR technologies, supply chains, project delivery processes and workforce skills to support fleet deployment, reduce costs and risk, accelerate timelines and build a globally competitive SMR industry.

1.7 Assess the strategic case for strengthening Canada's nuclear fuel supply chain to support new nuclear deployment at scale, building on Canada's existing uranium refining and conversion capabilities and assessing the potential role of enrichment over the near and long term. In the near term, Canada should continue to invest in and leverage its existing fuel-cycle strengths while securing diversified access to reliable allied enrichment services to de-risk supply. Over the longer term, governments should assess Canada's future enrichment needs and evaluate the business case for the options for domestic enrichment operations or partnerships with allies, while remaining aligned with international non-proliferation commitments. This work should be led by NRCan as part of new nuclear strategy development.

To enable implementation of the strategy:

1.8 Build and sustain public-sector capacity to deliver the strategy. Strengthen regulatory and public-sector capacity across federal and provincial governments by prioritizing sustained staffing, expertise and funding for the CNSC, IAAC, NRCan, CIRNAC, the MPO, and relevant provincial entities to ensure

timely, co-ordinated and high-quality decision-making.

1.9 Align provincial planning with the national strategy. Provinces pursuing SMR developments should align their energy strategies and system planning with the federal government's new nuclear strategy. The strategy should be reflected in provincial electricity system plans, integrated resource plans and decarbonization pathways, providing clarity on the role, scale and timing of SMR deployment within provincial grids and industrial systems.

1.10 Establish a standing SMR community of practice, convened jointly by NRCan and industry associations, the Canadian Nuclear Association (CNA) and the Canadian Association of Small Modular Reactors (CASMR), to share lessons from Canadian and international SMR projects regarding regulations, project delivery, financing, workforce development, supply chains and community engagement, with a focus on embedding lessons learned to enable repeatable, lower-risk deployment at scale.

1.11 Lead a co-ordinated national approach to public education on SMRs. The federal government, led by NRCan, should work with provinces, Indigenous organizations, utilities and industry associations (including CNA and CASMR) to provide accessible information on SMR safety, waste management, regulatory oversight, costs and system value, and to support informed public confidence, particularly in current and prospective host communities.

+ Second Play:

Establish a streamlined and predictable public financing pathway to de-risk and attract private financing for SMR projects.

Government support is essential to move projects to FID, especially during the earliest, most capital-intensive, and most high-risk phases of SMR projects. In this context, the federal government should:

2.1 Ensure that the MPO serves as the single window for SMR project proponents, including those at the pre-development to FID-phase. The MPO should co-ordinate with leading proponents to navigate federal financing programs, regulatory and permitting processes, Indigenous

engagement and alignment with enabling infrastructure requirements. The MPO would also need to co-ordinate with provincial governments advancing SMR projects, especially regarding financing.

2.2 Establish a co-ordinated, life-cycle "capital-stack" framework for public funding of projects, as part of the national new nuclear strategy. This should be developed by Finance Canada in collaboration with NRCan and provinces interested in SMR deployment, with the following goals:

a. Align the capital stack of federal and provincial grants, tax credits, loan guarantees and concessional finance into a coherent capital stack that is sequenced across the SMR project life cycle. (Refer to the financing recommendations by life-cycle stage below.)

b. Co-ordinate the current "alphabet soup" of programs and institutions to ensure that limited public capital is deployed at those stages where it is most needed, including the pre-development to FID stage, and where it can have the highest impact in improving capital efficiency, reducing financing risk and accelerating projects to FID and deployment.

c. Align the capital stack with regulatory timelines and Indigenous partnership development.

d. Prioritize limited public funds toward proponents with strong potential to successfully achieve an FID and pathway to deployment.

LIFE-CYCLE CAPITAL STACK FRAMEWORK:

In the pre-development to FID phase, the primary objective is to reduce uncertainties related to technology selection, licensing, site readiness and early Indigenous partnerships — areas where private capital is least willing to engage due to high sunk costs and first-of-a-kind risk.

Governments should:

a. Provide cost-shared grants for early engineering and licensing for those proponents not yet earning a return, to directly reduce first-of-a-kind technology cost risk, with costs to be shared by governments and proponents;

b. Create a dedicated SMR pre-development fund to cover costs such as front-end engineering design, licensing preparation, site characterization and environmental baselines, and Indigenous partnership development;

c. Provide loan guarantees for pre-FID debt and working capital to lower interest costs and attract foreign and domestic investors who would otherwise perceive SMRs as high-risk at this stage; and

d. Provide early-stage Indigenous equity bridge financing and capacity-building funding so Indigenous partners can engage meaningfully from the outset of SMR projects, including at the site selection stage.

Proponents should:

e. Reduce technology risk by avoiding first-of-a-kind deployment risks and leveraging Canada's first-mover advantage by adopting a fast-follower approach;

f. Engage early with regulators on licensing and ensure they understand the regulator framework and its intent; and

g. Ensure early engagement with Indigenous rights holders and affected communities on site selection.

***In the construction phase*,** the policy objectives shift to reducing the cost of capital, managing cost-overrun and schedule risk, and enabling bankability for capital-intensive nuclear builds. To apply financing tools in a clear and non-overlapping manner, governments should:

a. Explore establishing a RAB-style model at the provincial level, where appropriate, as a financing pathway for first-of-a-kind, utility-led SMR projects. Provincial governments, through their electricity regulators, should determine whether and how a RAB approach is applied, including cost-recovery rules and ratepayer protections. The federal government should play a supporting role by aligning federal financing and risk-sharing instruments to complement provincial RAB frameworks, without directing rate-setting or utility regulation;

b. Provide federal loan guarantees for construction debt to significantly reduce the weighted average cost of capital for SMRs;

c. Provide equity contributions through funds such as the Canada Growth Fund, the Canada Infrastructure Bank, or provincial entities such as the Building Ontario Fund, which will also attract Canadian and foreign investor capital;

d. Establish construction-cost-overrun insurance that acts as a federal backstop to cover a portion of the cost overruns beyond a set threshold;

e. Increase accelerated capital cost allowances and investment tax credits (ITCs) applicable to SMR construction to lower capital costs and improve project bankability. ITCs should be extended beyond 2040 to ensure currently proposed and upcoming projects can benefit from them; and

f. Provide financial support for major enabling infrastructure such as transmission upgrades and access roads to reduce project costs and accelerate timeliness.

***In the operations phase*,** the objectives are to stabilize revenues, support early operational performance and enable fleet-based SMR deployment, particularly for projects not relying on construction-phase revenue recovery models. To meet these objectives:

a. For SMR projects not using an RAB-style model, provide long-term power purchase agreements and contracts for difference to provide revenue stability and protect against wholesale price volatility;

b. Offer low-cost financing and other incentives for utilities that take a fleet approach to building multiple SMRs of the same design; and

c. Provide government-backed operating-risk insurance and financial backstops to address first-of-a-kind operational risks (including extended outages and supply-chain disruptions), and to support proponents in meeting CNSC financial assurance requirements for long-term waste management and end-of-life decommissioning liabilities. (With public financing addressing first-of-a-kind risks, attention should also turn to designing bankable financing models capable of mobilizing private and institutional capital at scale.)

2.3 Structure SMR investment opportunities to attract pension funds and other institutional investors as long-term capital partners. This should include drawing on precedents such as La Caisse's investment in the Sizewell C project, demonstrating how risk-mitigated nuclear assets can align with long-duration institutional investment mandates.

2.4 Canada's financial community should work with utilities and governments to develop bankable financing models for SMR deployment. Banks and institutional investors should collaborate to design and standardize financing instruments

that manage construction risk, provide revenue certainty and support fleet-based SMR deployment, drawing on emerging international practice.

+ Third Play:

Deliver efficient and effective regulatory and licensing processes for SMR projects.

These processes should be streamlined, reduce duplication, improve clarity and predictability and achieve a two-year process without compromising safety or environmental and Indigenous rights. Recognizing that reforms to federal impact assessment and nuclear regulatory licensing processes are inherently complex, the federal government should:

3.1 Immediately initiate a statutory review of the *Nuclear Safety and Control Act*, led by NRCan, to modernize Canada's nuclear regulatory framework and implement the federal commitment to "one project, one review, one decision" for major projects within a two-year approval timeline.

a. **The review should assess options to consolidate environmental assessment and Crown consultation co-ordination for new nuclear projects within a CNSC-enabled framework to remove overlap and duplication.** This modernization effort should draw on lessons from the creation of the Canadian Energy Regulator, with the objective of improving efficiency, certainty and timeliness in the federal review process.

b. **Once the CNSC has authority for these new responsibilities, remove nuclear projects from the *Impact Assessment Act* Physical Activities Regulations (the Project List) for new nuclear projects.** Projects already in an active *Impact Assessment Act* process should be grandfathered to avoid introducing uncertainties or inefficiencies. For future SMR projects, this change should take effect once legislative amendments are in force to establish a single, integrated federal assessment and oversight framework.

c. **In the interim, where the *Impact Assessment Act* continues to apply, IAAC should continue to act as the Crown Consultation co-ordinator,** with direction to simplify and streamline

its process requirements for nuclear projects to improve flexibility and reduce timelines. This interim approach should remain in place until new legislative authorities are enacted to support a single federal environmental assessment and Crown consultation lead for future nuclear projects.

d. **In the interim, continue to strengthen the CNSC's approach to Indigenous engagement** by increasing internal capacity needed to support timely, meaningful and culturally informed Indigenous engagement and by expanding its funding programs to support an enhanced role with respect to Indigenous consultations and engagement as a life-cycle regulator.

3.2 Streamline federal assessment and licensing processes for SMR projects proposed on brownfield sites or using proven, pre-approved technologies, regardless of the applicable federal assessment pathway. This should avoid restarting reviews from scratch, focus scrutiny on genuinely new or material risks, and support repeatable, fleet-based SMR deployment. Federal authorities, including the CNSC and, where applicable, the IAAC, should work collaboratively with NRCan and relevant provincial regulators to advance a single, co-ordinated assessment process, avoid duplicative requirements, and use co-operation and substitution mechanisms where appropriate:

a. Adopt standardized design approvals for SMR technologies that have completed CNSC design review, so that technology assessments are not repeated for each subsequent project using the same approved design; and

b. Apply risk-based scoping or accelerated impact assessment processes for SMR projects using approved technologies on existing or previously licensed nuclear sites, where environmental baselines and operational histories are well understood.

3.3 Accelerate ongoing work between IAAC and the CNSC to achieve a two-year approval timeline for existing SMR projects undergoing an integrated impact assessment process, working in collaboration with the MPO.

3.4 Direct the CNSC, to accelerate modernization of its regulatory approach for SMR projects (building on the federal Red Tape Reduction exercise).

a. Shift toward outcomes-based, risk-informed regulation, and systematically eliminate regulatory requirements that are not directly tied to nuclear safety, health or environmental protection, or that cannot be justified through rigorous cost-benefit analysis; and

b. Establish binding CNSC service standards (such as 12 or 13 months) and approval timeline guarantees.

3.5 Strengthen proponent readiness to support efficient regulatory review. Timely and predictable regulatory review depends on project proponents submitting complete, well-prepared and timely applications and supporting studies, informed by early pre-application engagement with regulators (including the CNSC and IAAC), with the right information provided at the right time as projects advance.

+ Fourth Play:

Advance meaningful opportunities for Indigenous partnerships and economic participation in the development of Canada's new nuclear industry and its supply chains.

The federal and provincial governments should:

4.1 Clarify how the Crown will discharge its duty to consult and accommodate Indigenous rights holders, and the role and expectations of project proponents in supporting that duty, in alignment with Canada's commitments under the United Nations Declaration on the Rights of Indigenous Peoples. This work should be led by CIRNAC in collaboration with other federal departments with roles in this area, and should prioritize the following:

a. Establish clear expectations and requirements for project proponents for early, project-specific engagement with Indigenous rights holders and communities. At the outset of the process, governments should define consultation scope and timelines, including the identification of affected Indigenous rights holders and communities ("zone of inclusion"), and require proponents to undertake meaningful engagement as early as the site-selection stage — before technology selection, licensing strategy or the submission of any application to the CNSC — consistent with the

Crown's duty to consult and the objective of building consensus and addressing historical concerns early;

b. Provide federal and provincial funding for Indigenous capacity, especially at the early stages of project development, to enable meaningful consultation. This should include support for Indigenous-led organizations and institutions to expand their capacities to provide technical, legal, governance and community-engagement supports for affected rights holders and communities; and

c. Require project proponents to support Crown-led engagement through timely information sharing, technical support and relationship-building, without assuming or displacing the Crown's constitutional obligations.

4.2 Conduct a full "net benefit" analysis for SMRs in Indigenous communities across Canada to clearly communicate the economic, environmental, technological and social impacts of SMR projects, the role of SMRs in reducing dependence on diesel fuel in remote communities, and the opportunities for Indigenous communities to participate and build value at every step of the supply chain from mining to operations. This should be a collaborative effort between the designated Crown consultation co-ordinator and industry associations (including CNA and CASMR).

4.3 Enable Indigenous equity ownership through tailored financing and risk-sharing tools across the SMR life cycle, from pre-development to operations, through the following measures:

a. Provide affordable access to capital through Indigenous loan guarantees for the construction and operational phases of an SMR project;

b. Pair Indigenous loan guarantees with early-stage risk-sharing and capacity funding to enable Indigenous equity participation from the outset of SMR projects. Include capacity grants, cost-shared feasibility funding, and proponent-funded participation agreements, as well as targeted public-risk capital such as direct lending alongside Indigenous loan guarantees, for higher-risk, pre-revenue stages; and

c. Increase opportunities for Indigenous procurement, contracting and business development. For example, establish

dedicated procurement and contracting processes that maximize Indigenous business participation in project development.

4.4 Integrate Indigenous businesses into the SMR supply chain from the outset. Set clear expectations for Indigenous procurement and workforce participation, through such mechanisms as funding conditions, Crown utility mandates and project approvals, and provide supports to ensure supplier readiness, certification and skills-development programs to position Indigenous firms for high-value nuclear supply-chain opportunities.

4.5 Fund Indigenous-led feasibility studies for off-grid SMRs and micro-reactors as alternatives to diesel fuel, along with long-term governance and ownership options, where communities express interest.

4.6 Continue to build on the effective practice of establishing Indigenous monitoring committees to directly participate in environmental oversight and monitoring of project impacts in real time throughout the life cycle of SMR projects, including in nuclear waste management and decommissioning.

+ Fifth Play:

Build the enabling infrastructure needed to deploy SMRs at scale.

The federal government should:

5.1 Make enabling infrastructure a critical-path requirement for SMR projects. This should be led by the MPO as part of its federal project co-ordinator role for major projects. Require the MPO to lead the early identification and co-ordination of all enabling infrastructure necessary for SMR deployment, including transmission and grid interconnections, transportation and site access, nuclear fuel and waste logistics, and workforce readiness, doing so by co-ordinating across federal departments and agencies, provincial governments, system operators, regulators and Indigenous partners, and aligning infrastructure delivery with regulatory, financing and project development timelines.

5.2 Align federal and provincial financing tools to support enabling infrastructure that is essential to SMR deployment, including transmission upgrades, grid reinforcements, site access and transportation corridors.

5.3 Build and sustain the people and supply-chain workforce required to deploy SMRs at scale.

a. Federal and provincial governments should co-ordinate workforce planning, training, immigration and credential recognition across Employment and Social Development Canada, NRCan, the CNSC, Immigration, Refugees and Citizenship Canada and Indigenous training organizations. This should include engineers, technologists and skilled trades across the full SMR value chain, from reactor design and manufacturing to construction, operations and decommissioning, in partnership with utilities, domestic supply-chain firms, post-secondary institutions, unions and project proponents.

b. Governments should work with universities, colleges and apprenticeship systems to expand SMR-relevant programs, strengthen applied and work-integrated learning and improve completion and job-placement outcomes in critical technical and skilled-trade occupations.

c. The federal government should explicitly align immigration selection and credential recognition systems with SMR workforce needs, including rebalancing points-based selection toward skilled trades and technical experience, prioritizing permanent residency pathways for international graduates in SMR-relevant fields, and accelerating foreign credential recognition through harmonized standards and supervised work-experience pathways.

+ Sixth Play:

Position Canada as a global leader in SMR deployment, supply chain and services.

The federal government should:

6.1 Develop a coordinated federal SMR export and deployment strategy, as a key component of the national new nuclear strategy, that leverages domestic fleet deployment to build first-mover advantage.

a. Task Global Affairs Canada (GAC), working with NRCan, Innovation, Science and Economic Development Canada (ISED), Export Development Canada (EDC) and the MPO, to promote Canada's end-to-end SMR value proposition to countries pursuing SMR programs.

b. This should include technology, supply chains, construction and engineering services, regulatory and operations expertise.

6.2 As part of this strategy, leverage Canada's established nuclear capacity and first-mover advantage in SMR deployment to anchor a globally competitive supply chain and services ecosystem.

a. Working closely with SMR technology owners and vendors, including those supporting OPG's SMR deployment, Canada should identify, qualify and scale Canadian firms across manufacturing, construction, engineering, operations and full life-cycle services. This work should be led by GAC, in collaboration with NRCan, ISED, EDC, Business Development Canada (BDC) and implicated provincial governments and agencies, and it should include engagement with allied governments where SMR intellectual property and export controls reside.

b. Position Canada as a partner of choice for SMR intellectual property owners, combining early deployment, regulatory credibility and co-ordinated public financing to secure durable participation for Canadian firms in domestic and international SMR projects.

6.3 Protect Canadian-developed SMR intellectual property by directing GAC to align public financing, (IP) governance and export controls to retain and scale SMR-related technologies in the national interest.

a. Require that public and ratepayer support for SMR projects include conditions to retain and grow Canadian-developed IP, manufacturing and services in Canada, particularly for technologies created through first-of-a-kind deployment.

b. Review and modernize the *Export and Import Permits Act* to enable consideration of national economic and strategic interests in decisions related to the transfer and licensing of SMR-related technologies and know-how developed with public support.

6.4 Deploy export finance and risk-mitigation tools to support Canadian SMR projects abroad. EDC should expand its use of financing, guarantees and insurance to support Canadian firms competing for SMR opportunities in foreign jurisdictions, complemented by BDC providing firm-level growth capital and balance-sheet support to help Canadian SMR suppliers and service providers scale and participate in EDC-backed export transactions.

6.5 Leverage CUSMA and other trade negotiations to anchor the Canada-U.S. SMR supply chain and support global exports. This should be led by GAC, in consultation with implicated federal departments and provincial governments, and should use upcoming CUSMA negotiations to designate SMRs and their supply chains as strategic North American energy and security assets, ensuring preferential treatment and reduced tariffs for SMR-related goods and services.

6.6 Establish priority bilateral SMR partnership mechanisms with key allies to advance deployment, supply chains and global market access. This should be led by GAC in collaboration with implicated federal departments.

a. Establish a Canada–U.S. SMR co-operative mechanism to align intellectual property protections, export controlsand regulatory interoperability, anchoring an integrated North American SMR supply chain and securing durable market access for Canadian firms across U.S.-led and allied SMR deployments.

b. Establish a Canada–U.K. SMR co-operative mechanism centred on regulatory co-operation, standardized licensing approaches and collaboration on public and regulated-asset financing models, leveraging the U.K.'s SMR deployment experience to accelerate repeatable project delivery and enhance Canada's credibility as a global SMR deployment and services partner.

+ Seventh Play:

Establish accountable governance to successfully deliver on SMR deployment.

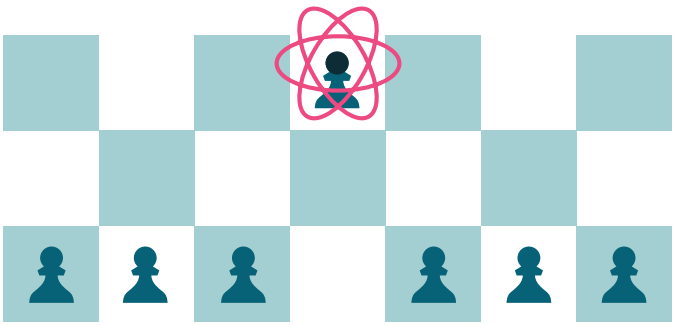
The federal government should:

7.1 Anchor SMR governance to the national new nuclear strategy's defined outcomes. This will serve as a framework for accountability across federal and provincial governments, regulators and utilities.

7.2 Create a deputy ministers' committee to oversee implementation of the national new nuclear strategy and the MPO's advancement of individual SMR projects, with clear escalation pathways to the Build Canada cabinet committee where decisions or trade-offs are required.

7.3 Establish a formal federal-provincial governance and co-ordinating mechanism for SMR deployment to ensure alignment of SMR objectives, regulatory approaches, system planning and public financing with provinces interested in integrating SMRs into their electricity systems. This work should be led by NRCan.

Conclusion: Bold Leadership in Changing Times



In geopolitics, in the global nuclear industry and in Canada's electricity systems, these are times of great changes and big challenges. And these times call for bold leadership and a clear new direction for Canada's nuclear industry — a national new nuclear strategy, built on the foundations of its first-mover status in the SMR business.

Taken together, the seven plays for SMR policy outlined here send a clear message to policymakers at every level of government: Canada has a rare opportunity to become a leader in this new nuclear era, but it must act now — quickly, decisively and thoroughly — to adopt a *Build Big Things* framework that can bring together the necessary financing, regulations, infrastructure and Indigenous participation to get more SMRs to FID faster and seize that opportunity in full.

Canada has a rare opportunity to become a leader in this new nuclear era, but it must act now.

+ Acronyms

AI
artificial intelligence

BDC
Business Development Canada

CASMR
Canadian Association of Small Modular Reactors

CIRNAC
Crown-Indigenous Relations and Northern Affairs Canada

CNA
Canadian Nuclear Association

CNSC
Canadian Nuclear Safety Commission

CUSMA
Canada–United States–Mexico Agreement

EDC
Export Development Canada

FID
final investment decision

GAC
Global Affairs Canada

GW
gigawatt

IAAC
Impact Assessment Agency of Canada

IEA
International Energy Agency

IP
intellectual property

ISED
Innovation, Science and Economic Development Canada

MOU
memorandum of understanding

MPO
Major Projects Office

MW
megawatt

NRCan
Natural Resources Canada

NWMO
Nuclear Waste Management Organization

OPG
Ontario Power Generation

RAB
regulated asset base

SMR
small modular reactor

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