



*Canada's utilities, regulator, supply chain and industry associations are all working together to further development of advanced nuclear and small modular reactor technology in Canada.*

## On the path to a sustainable future

***Canada sets an SMR roadmap for nuclear's role to help it meet its targets on climate change and a clean economy; COG is part of the plan.***

On Nov. 7, as the nuclear industry gathered for a sold out conference on the development of advanced nuclear and small modular reactors, the Ministry of Natural Resources released a [report](#) outlining a path forward for Canada's vision for an SMR roadmap.

"Innovation in the nuclear sector plays a critical role in reducing greenhouse gas emissions and delivering good, middle-class jobs as Canada moves toward a low-carbon future," the government's release said.

"Small Modular Reactors (SMRs) have the potential to provide energy from non-emitting sources for a wide range of applications, such as grid-scale electricity generation and for use in heavy industry and remote communities."

Development of the Roadmap involved extensive engagement with the industry and potential end users. The process also included initial dialogue with Indigenous and northern communities, as well as expert analysis.



*CANDU Owners Group Director Rachna Clavero spoke about progress of COG's SMR Technology Forum.*

The report contains over 50 recommendations in areas such as waste management, regulatory readiness and international engagement. It also highlights the need for ongoing engagement with civil society, northern and Indigenous communities and environmental organizations.

The release of the roadmap is just Step 1. Through [Generation Energy](#), the government encourages Canadian partners to continue to work collaboratively together and with "interested provinces, territories, power utilities

## *Canada's path to SMRs launched (cont)...*

and other stakeholders to develop a stakeholder-driven process” to further develop the path to SMR deployment, including with Indigenous communities.

The CANDU Owners Group (COG) has been working with its members and other industry partners and stakeholders as part of the process leading up to the [Roadmap](#). Within the government’s recommendations are two actions for COG to continue its role in developing the regulatory and technical path forward for SMR development and a Canadian nuclear waste strategy that includes SMRs.

In April 2017, COG established the SMR Technology Forum (SMRTF) as a mechanism for collaboration to support SMR deployment.

“The goal is to identify key issues to promote harmonized policies to support both on-grid and off-grid SMR applications,” says COG Nuclear Safety and Environmental Affairs Director Rachna Clavero. “Our members benefit both financially and technically by developing a harmonized approach that will allow us to converge on a common set of requirements.”

In Section A-7 of the report, the government outlines the role for COG as continuing the work begun with the SMRTF “to bring together vendors and utilities for practical collaboration.” As well, the report recommends COG, as secretariat on the industry’s Radioactive Waste Leadership Forum (RWLF), should identify and develop an integrated waste management plan that considers SMR waste management.

Every form of electricity generation has waste that must be managed. If it is not, it will be a burden to future generations. This is true for generation from fossil fuels, as we are experiencing now with the challenges presented by carbon levels. It is also true for renewables. Those industries are looking at models for reducing the ecological footprint of those technologies, both in resource use and end of life decommissioning.

Clavero says, the nuclear industry has been managing waste, and with Canadians, developing a plan for [long-term management of spent fuel](#). With advancing nuclear technology, including SMRs, there is an opportunity to explore waste management options that will further reduce the burden for future generations; a body of work COG is well-positioned to support.

“COG’s collaboration model works well when you want to create a solution applicable for the industry as a whole or at least a number of partners within it,” says Clavero. “The operators have a role in this, the Nuclear Waste Management Organization has a role in this, and so do the many companies involved in supply chain who are developing innovative solutions for both decommissioning and waste management.”

COG can bring the different pieces of the puzzle together to create a clear picture for the industry, for the regulator, the government and for Canadians, says Clavero. And, she adds, COG’s international membership and activities provide a strategic advantage to the Canadian industry.

“In addition to the pieces identified in the roadmap document, there is another

## Canada's path to SMRs launched (cont)...

opportunity for the industry through COG," says Clavero. "COG brings its expansive international relationships to the SMR work. With COG's international members and international agency partners, COG is well-positioned to facilitate a framework for a global SMR fleet model."

Getting a low-carbon electricity generation mix is only one component of addressing carbon targets and climate change. Transportation and other infrastructure accounts for the majority of the emissions. However, a clean grid is a foundational piece for moving all the other infrastructure off fossil fuels.

Where CANDU and other traditional nuclear plays a vital role in providing large amounts of clean, baseload power, the smaller, scalable SMRs provide a flexible option that compliments the role of both traditional nuclear and renewables, which are inherently intermittent in their reliance on weather conditions.

SMRs can also be used in remote communities, replacing diesel power and giving rural communities self-reliance without the air pollution that accompanies diesel.

In 2019, COG will celebrate its 35th anniversary. For the organization, whose mandate has always been to facilitate the industry's innovation agenda, it may come to be known as the year of "CANDU and beyond."

# SMR development in Canada

For more information on COG's efforts on SMR development, email **Natalie Alderson** at [Natalie.Alderson@CANDU.org](mailto:Natalie.Alderson@CANDU.org).

## Further information on Canada and SMRs:

[Canada's SMR Roadmap](#): A report providing direction on a path forward for SMR deployment, the document was created from a seven-month consultation process.

[Government of Canada SMR Roadmap announcement](#): The Ministry of Natural Resources Nov. 7 release on the SMR Roadmap.

[Canadian Nuclear Laboratories SMR Roundtable](#): On Nov. 7, CNL hosted an SMR vendor and supply chain roundtable as part of its larger [SMR initiative](#).

[OPG and NuScale Energy MoU](#): Ontario Power Generation and NuScale Energy announced an agreement to work jointly to validate design feasibility for Canadian standards and regulations.

[New Brunswick government \\$10-million SMR Research Cluster investment](#): In June, the New

Brunswick government announced \$10-million toward a research cluster to investigate feasibility of a commercial demonstration SMR and associated advanced manufacturing activities in that province. Two vendors also announced investments of \$5 million each in subsequent announcements:

[ARC announcement](#)

[Moltex Energy announcement](#)

[Bruce Power MOU with MIRARCO Mining and Laurentian University](#):

In April, Bruce Power signed an MOU for strategic research opportunities, including the long-term potential for Small Modular Reactors (SMRs) to generate clean, low-cost and reliable electricity in rural/remote regions.

[CNSC pre-licensing vendor design review](#): Detailed information about the process is available on the Canadian regulator's website.

