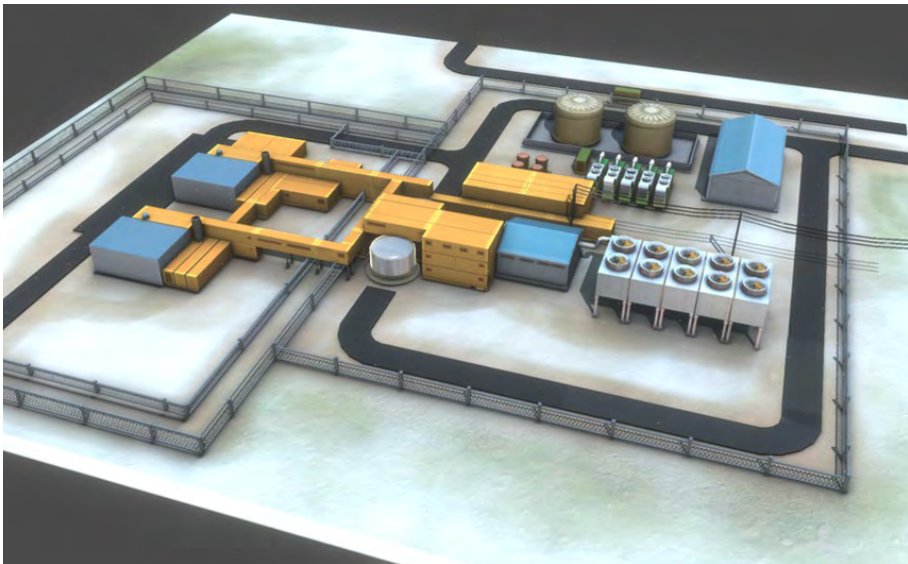


SMRs

on the road to reality

COG's SMR program is contributing to Canadian and international collaboration, advancing SMR technology and strengthening industry alignment on deployment — a reality that's getting closer with a collaborative government and industry commitment



On June 29, OPG became the first utility in North America to take an ownership stake in an SMR project, a major Canadian milestone. Above, an illustration of Global First Power's proposed Micro Modular Reactor project, a joint venture for which OPG is part owner.

Canada pioneered the use of nuclear energy more than 70 years ago and today its federal government, some of its provinces and industry are poised to lead the world in the technology's newest transformation -- small modular reactors (SMRs).

SMRs offer new design features that can provide flexible energy solutions to support the transition to cleaner energy systems, in Canada's cities, remote communities and for export of clean, safe and easily-mobilized energy sources to people, world-wide.

CANDU Owners Group (COG), its members, supply community and other industry partners continue to make in-roads in accelerating the development and implementation of SMRs in Canada and to international markets. The last year has seen significant progress towards that goal, despite the COVID-19 pandemic.

Most recently, on June 29, Ontario Power Generation announced it had become the first utility in North America to take an ownership stake in a small modular reactor (SMR) project (see full story to follow).

Through COG's Nuclear Safety and Environmental Affairs (NSEA) line of business, COG has taken a leadership role in facilitating information exchange and development on SMR activities. COG is working with the Canadian Nuclear Association on the Canadian Nuclear Industry SMR Secretariat to track progress on the pan-Canadian SMR Roadmap, published in 2018.

Canada's SMR Roadmap made over 50 recommendations, including that the federal government and partners finalize an SMR Action Plan, now out for input.

In February 2020, Minister O'Regan announced plans to respond with a launch this fall, stating "Together with our partners from across the country, we will launch Canada's SMR Action Plan – outlining the progress and ongoing efforts across Canada to turn our Roadmap into reality."

Through COG, a CEO SMR Forum was developed, comprised of industry executives focussing on development of a common industry framework and building an SMR case for support from the federal government. The Forum recently put forward an ask to the Canadian Government for economic stimulus. The CEOs outlined the strategy for pursuing SMRs, the opportunity for Canada and the role the federal government can play on the road to SMR deployment.

Meanwhile, the CEO SMR Working Group has focused on commissioning and completing an SMR market study and supporting the interprovincial MoU on SMRs between Ontario, New Brunswick and Saskatchewan.

International leadership

Beyond Canada's borders, COG is playing a role in international collaboration.

In June, COG Deputy CEO Rachna Clavero, served as a pan-elist for the International Framework for Nuclear Energy Cooperation (IFNEC) webinar on global SMR licensing challenges.

Clavero says COG plays an important role in developing a harmonized approach to SMR deployment in Canada and internationally.

"COG brings its strong Canadian and international relationships to the SMR work. With our Canadian and international members and agency partners, COG can facilitate a framework for a global SMR fleet model," she says. "We are seeing gradual progress towards this objective thanks to our experience bringing global nuclear industry stakeholders together."

The COG SMR program is working with international nuclear-focussed organizations such as the EPRI Advanced Nuclear Technology program, World Nuclear Association and the U.K.'s Office for Nuclear Regulation to share relevant information to and from COG's SMR Technology Forum (SMRTF) and its SMR Vendor Participant Program (SMR VPP).

The SMRTF and SMR VPP have inter-related objectives and jointly support advancement and deployment of SMRs in Canada and around the world (see full list of SMRTF and SMR VPP participants in sidebar).

In September, COG will host a joint webinar with EPRI focussing on establishing SMR owner-operator requirements and emerging areas for SMR collaboration.

Clavero says SMR development is expected to expand and COG has an active role to play.

"As COG members come to agreement on selection of an on-grid SMR technology for deployment, COG will support the vendors selected through related joint projects as well as research & development. This has the potential to bring clean, carbon-free SMR technology online to the benefit of Canadians and electricity customers around the world."

The COG SMR Technology Forum

The SMRTF, which launched in April 2017, consists of all the Canadian nuclear operators as well as key industry organizations leading in the areas of nuclear innovation and SMR development in Canada. The Forum promotes harmonized approaches to support SMR application. In February, the Forum identified strategic priorities focusing in on evaluation of the Canadian SMR supply chain; accelerating standards for advanced manufacturing and SMR nuclear liability insurance limits.

SMRTF participants

OPG*
Bruce Power*
NB Power*
CNL

Observers

AECL
SaskPower*
CNA
CSA
CNS
OCNI
UNENE
NRCan

* Denotes member
of CEO Forum

COG Vendor Participant Program

The COG SMR VPP, which was established last year, brings together vendors engaged in SMR design review or who are connected with a COG member on SMR development. As a group, vendors contribute to common technical positions, engage with industry on shared challenges, and participate in the development of solutions. The SMR VPP currently has 10 participating vendors.

ARC Nuclear Canada
GE Hitachi Nuclear Energy
Holtec
Moltex Energy
NuScale Power

Terrestrial Energy
U-Battery
USNC
Westinghouse
X-energy

Natalie Alderson named COG program manager for SMRs



Natalie Alderson, COG's Nuclear Safety & Environmental Affairs Program Manager supports COG's SMR program and the Radioactive Waste Leadership Forum (RWLF). Alderson joined COG in 2018 as a project manager, when both SMRs and RWLF were new to COG, and part of its expanded role in advancing opportunities in CANDU and beyond.

Alderson came to COG with a technical background in nuclear safety and physics from AECL, followed by project management experience with domestic and international clients through Hatch. At COG, she has managed the growth in SMR activities, launched the SMR vendor participant program and supported members in achieving alignment in the waste management area.

As SMR activities continue to expand, and COG members fulfill their visions, Alderson will oversee those activities with a focus on strengthening collaboration in this area.

OPG marks major milestone in SMR development

On June 29, Ontario Power Generation (OPG) announced it had become the first utility in North America to take an ownership stake in a small modular reactor (SMR) project.

Ottawa-based Global First Power (GFP), U.S.-based Ultra Safe Nuclear Corporation and OPG jointly launched the Global First Power Limited Partnership which will build, own and operate a proposed Micro Modular Reactor (MMR) at the Chalk River Laboratories site. The Chalk River site is operated by COG member, Canada Nuclear Laboratories.

The joint venture, equally owned by OPG and USNC, represents the first commercial partnership on an SMR in Canada. OPG will help advance the project through the environmental assessment and licensing stages. USNC will be the designer and supplier of the technology.

In addition to committing funds, OPG and USNC will be providing their own staff and other resources to GFP, which will be overseeing the project.

Read the full announcement [here](#).