A CEMinal moment

Is the world ready to let nuclear help with the heavy lifting to mitigate climate change? On the cusp of the IAEA's international climate change conference, 7-11 October, **Jacquie Hoornweg** reports on recent events in Canada that provide cautious optimism

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The nuclear industry has long believed it has much to contribute to addressing climate change while meeting a growing demand for safe and abundant power

THE NUCLEAR BUSINESS OFTEN FEELS like a game of tennis sitting at Deuce, that challenging spot where either player must achieve two consecutive points to achieve a win. It can be incredibly frustrating to have victory so close, only to have it postponed for another day.

If the industry is looking for some positive markers that the technology might be gaining traction, recent events in Canada suggest the tipping point could be close.

The tenth Clean Energy Ministerial (CEM10), a high-level global forum promoting policies and programmes to advance clean energy technology, was held in Canada earlier this year. It was unlike any CEM before it.

Until recently, CEM's 25-member country forum did not include nuclear when contemplating pathways to achieve clean energy goals. But in May 2018, at CEM9 in Copenhagen, that changed. A new nuclear innovation partnership was announced under the leadership of the USA, Canada and Japan. Since then, Argentina, Poland, Romania, Russia, the UAE and the UK have also signed on. Called Nuclear Innovation: Clean Energy Future (NICE Future), the initiative identifies nuclear as integral to clean energy systems.

The goal of the NICE Future initiative is to improve power system integration through innovative, integrated energy systems and applications, such as nuclear-renewable systems, combined heat and power, hydrogen production and industrial decarbonisation. The initiative also seeks to highlight the opportunities for nuclear energy technologies to reduce emissions and air pollution from power generation, industry and end-use sectors.

Fast-forward a year to May 2019 in Vancouver, British Columbia where the Canadian government hosted CEM10 in tandem with the Generation IV International Forum (GIF), a co-operative international endeavour for research and development of next-generation nuclear energy systems.

Participants in the week-long gathering brought nuclear energy to meeting rooms, side events and an innovation showcase. Of the 1500 international delegates, hundreds represented various facets of the nuclear industry. As importantly, the agenda shone a spotlight directly on the role of nuclear as an enabler of a clean energy future.

Within the discussion on clean energy, investment and diversity that Canada led at CEM10, there was an opportunity to build a bridge between the people talking clean energy policy in non-nuclear forums and those working to make nuclear more accessible to the mainstream clean energy audience.

Efforts by government leaders, industry, and civil society got a significant boost in achieving this when International Energy Agency (IEA) Executive Director Fatih Birol released the organisation's first nuclear report in 20 years with a passionately addressed presentation at the start of the event week. The report highlighted the important role for nuclear in a clean energy mix and made the case for nuclear investment — in refurbishments and new builds — to meet climate targets *(see NEI July, p4)*.

CEM10 was also the launchpad for the *Flexible Nuclear Campaign*, an initiative within NICE Future that aims to include advanced nuclear and SMRs in mainstream energy models by demonstrating their value to the model creators.

The CEM Nice Future countries collectively released *Breakthroughs*, a book of 20 short illustrated stories on near-term nuclear innovation. A documentary film, *The New Fire*, about young, entrepreneurial SMR developers, by Canadian Emmy award-winning director David Schumacher was screened in a downtown Vancouver theatre.

At GIF, more than 100 participants gathered for a day-long workshop to move the conversation from policy to concrete activities toward deployment of SMRs.

But Canada's nuclear buzz is more than policy talk. Several activities under way offer real opportunity:

- Development of a national SMR roadmap by a consortium of government and industry participants;
- A plan by Canadian Nuclear Laboratories to serve as a global hub for SMR R&D;
- Investment by several provinces, utilities and vendors in SMR development for on and off-grid applications;
- Public and private investment in nuclear refurbishment;
- A CAD $49.3 million federal investment in a British Columbia fusion development company;
- Several presentations in Canada and internationally by Rumina Velshi, the head of Canada's nuclear safety regulator, about preparing to regulate innovation.

In July, the Canadian government issued a notice of commencement on the country's first environmental assessment (EA) for a small modular reactor project *(see p26-29)*. The CANDU Owners Group (COG) has developed an SMR Technology Forum for potential operators and an SMR Vendor Participant Group. COG, was formed 35 years ago as a collaboration vehicle for Candu plant operators. In recognition of the changing technology opportunities and its members evolving interests, it has recently moved to a *Candu and beyond* model.

Canadian delegates will bring these efforts to the IAEA International Conference on Climate Change and the role of Nuclear Power, this October. As conference participants examine the role of existing and evolving nuclear in addressing the world's need for clean energy, a speech by Hoesung Lee, Chair of the Intergovernmental Panel on Climate Change (IPCC) is certain to draw attention, especially coming just two months prior to the 25th Conference of the Parties in Santiago Chile, this December. ■