



**Supplementary Information
Oral presentation**

**Presentation from the
Organization of Canadian
Nuclear Industries (OCNI)**

In the Matter of the

Canadian Nuclear Laboratories

Application for the renewal of the Nuclear
Research and Test Establishment Operating
Licence for the Chalk River Laboratories

Commission Public Hearing

January 23-25, 2018

**Renseignements supplémentaires
Exposé oral**

**Présentation de
Organization of Canadian
Nuclear Industries (OCNI)**

À l'égard des

Les Laboratoires Nucléaires Canadiens

Demande de renouvellement du permis
d'exploitation d'établissement de recherche
et d'essais nucléaires pour les Laboratoires
de Chalk River

Audience publique de la Commission

23-25 janvier 2018

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Support for Renewal of Operating Licence for Chalk River Laboratories

Presentation to the CNSC Public Hearing - CMD 18-H2.9
January 24, 2018

Ron Oberth, President and CEO
Organization of Canadian Nuclear Industries (OCNI)



ORGANIZATION OF
CANADIAN NUCLEAR
INDUSTRIES

Clean Energy for a Low Carbon Economy

About OCNi

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The **Organization of Canadian Nuclear Industries** (OCNi) represents a broad range of Canadian nuclear suppliers – majority of members are SME's

230 members with **12,000** highly skilled people increasing to 20,000 when Ontario refurbishment projects are underway



CONNECTION

Strengthen linkages between OCNi suppliers and utilities and large EPC's.



READINESS

Increase supplier skills and resources to undertake large projects (refurbs).



GLOBAL REACH

Develop international opportunities for Canadian suppliers – focus on SME's.



ADVOCACY

Government and public advocacy for nuclear technology. "Ontario Nuclear Advocacy Team"

Nuclear Industry in Canada

5 Facts

about Canada's nuclear industry:

1. Highest standards of safety and quality
- No CANDU accidents
2. >50 reactors around world based on Canadian design
3. CANDU reactors can recycle nuclear fuel from LWR reactors
4. Leader in development of next generation reactors
5. Second largest producer of uranium



employs

> 40,000

people directly



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CANDU Reactors
in Canada



200 +

Suppliers across
Canada



>\$1.6 billion

annual export sales



\$6 billion

industry



World leader

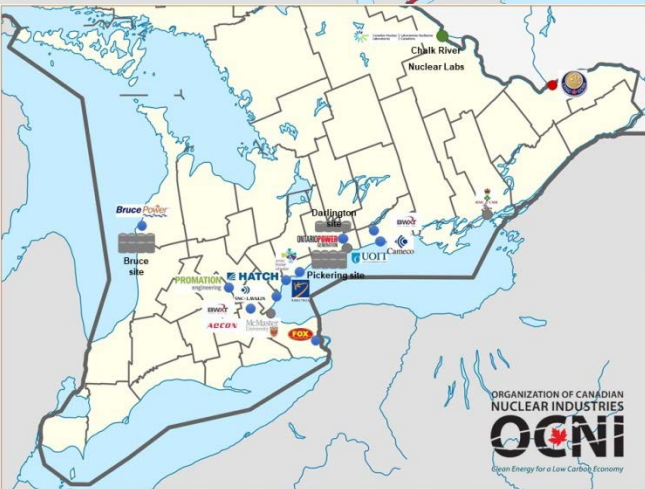
in nuclear safety,
technology, &
performance

Nuclear Industry in Canada



Ontario

- Chalk River was birthplace of nuclear industry in Canada
- Ontario > 60% electrical energy from nuclear
- >200 Canadian nuclear suppliers



New Brunswick

- one CANDU unit

Saskatchewan

- world's second largest uranium producer >10,000 Mt/a

Canadian Nuclear Laboratories

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- Canada's nuclear research & innovation center
- Strong Track Record of Safe Operations and Environmental Stewardship
- CRL technology underpins Canada's nuclear plants and the nuclear supply chain
- Supports Climate Change Mitigation in Canada and Worldwide – especially China



ORGANIZATION OF
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Clean Energy for a Low Carbon Economy

CRL Technology Development and Transfer to Private Sector – success stories

- **Nordion and Theratronics** - medical
- **TRIUMF** (BC) – particle research
- **London Nuclear Limited** -decontamination
- **SNC Lavalin Nuclear** - reactor design
- **Bubble Technology Industries** –border security
- **Nray Services Inc.** – jet engine blade inspection
- **GasTOPs Ltd** – critical equipment safety
- **ZETEC** (Quebec)– Steam Generator inspection
- **lotron Industries** (BC) – material processing
- **ACSion Industries** (Manitoba)- radiation safety

OCNI Special Achievement Award presented to CNL for revitalization of CRL Site –September 2017

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CRL Research, Innovation and Test underpins nuclear suppliers across Ontario

200

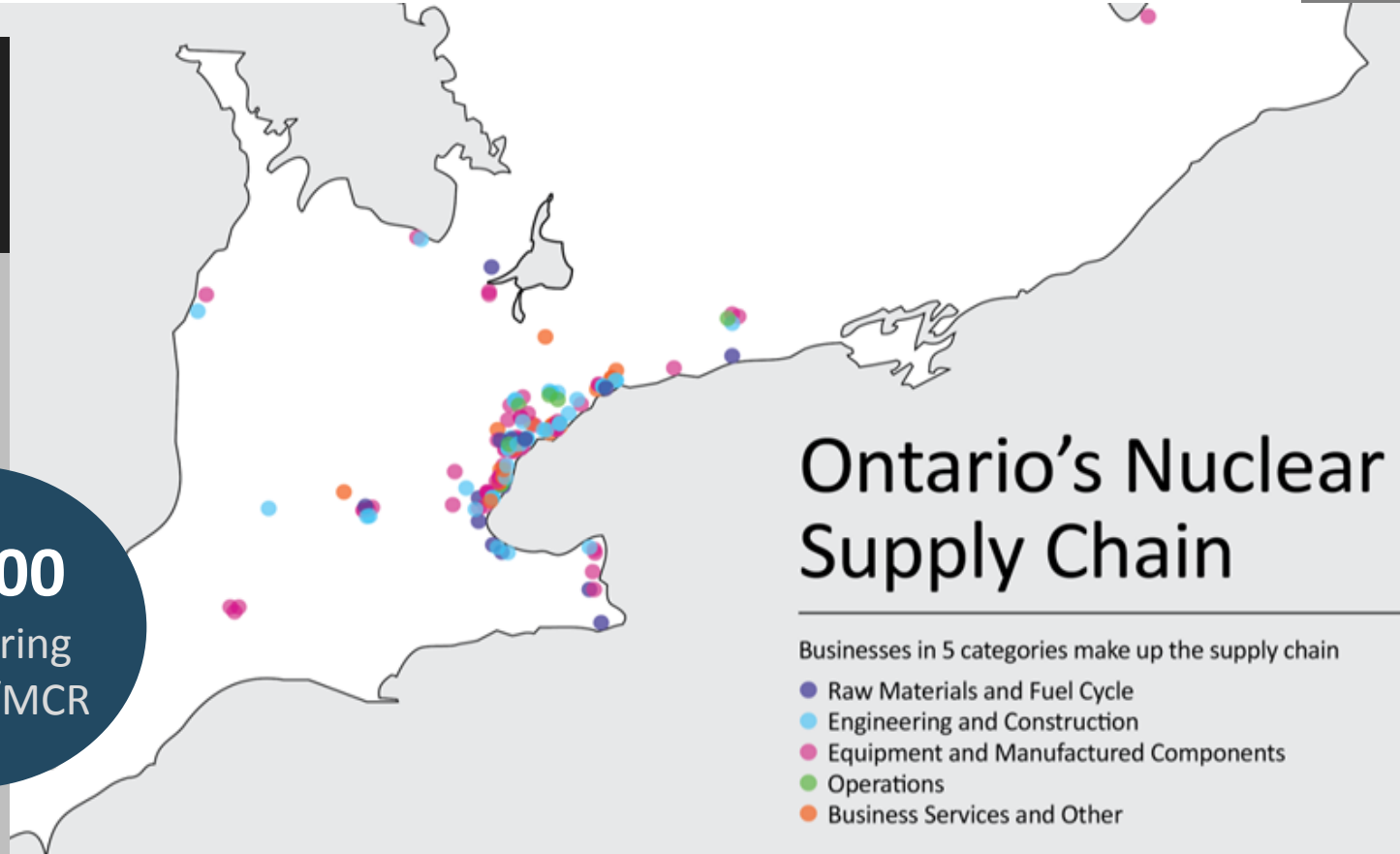
companies across Ontario
(many SMEs)



14,000
supply chain
jobs

20,000

Jobs during
Refurbs/MCR



CRL also supports:

- Commercial R&D orgs (**Kinectrics-NSS, Stern Labs**)
- Universities and post-secondary institutions (**UOIT, McMaster, Royal Military College, Queens, UofT**)
- Engineers and constructors (**SNC Lavalin, Hatch, Worley Parsons, Aecon, E.S.Fox**)
- Equipment designers/ fabricators (**BWXT, Promation, ATS, Rolls-Royce**)
- Environmental and licensing consultants (**Golder Associates, Kinectrics-NSS, Stantec**)
- Nuclear Plant Operators (**OPG, Bruce Power, NB Power**)
- Uranium miners and processors (**Cameco**)

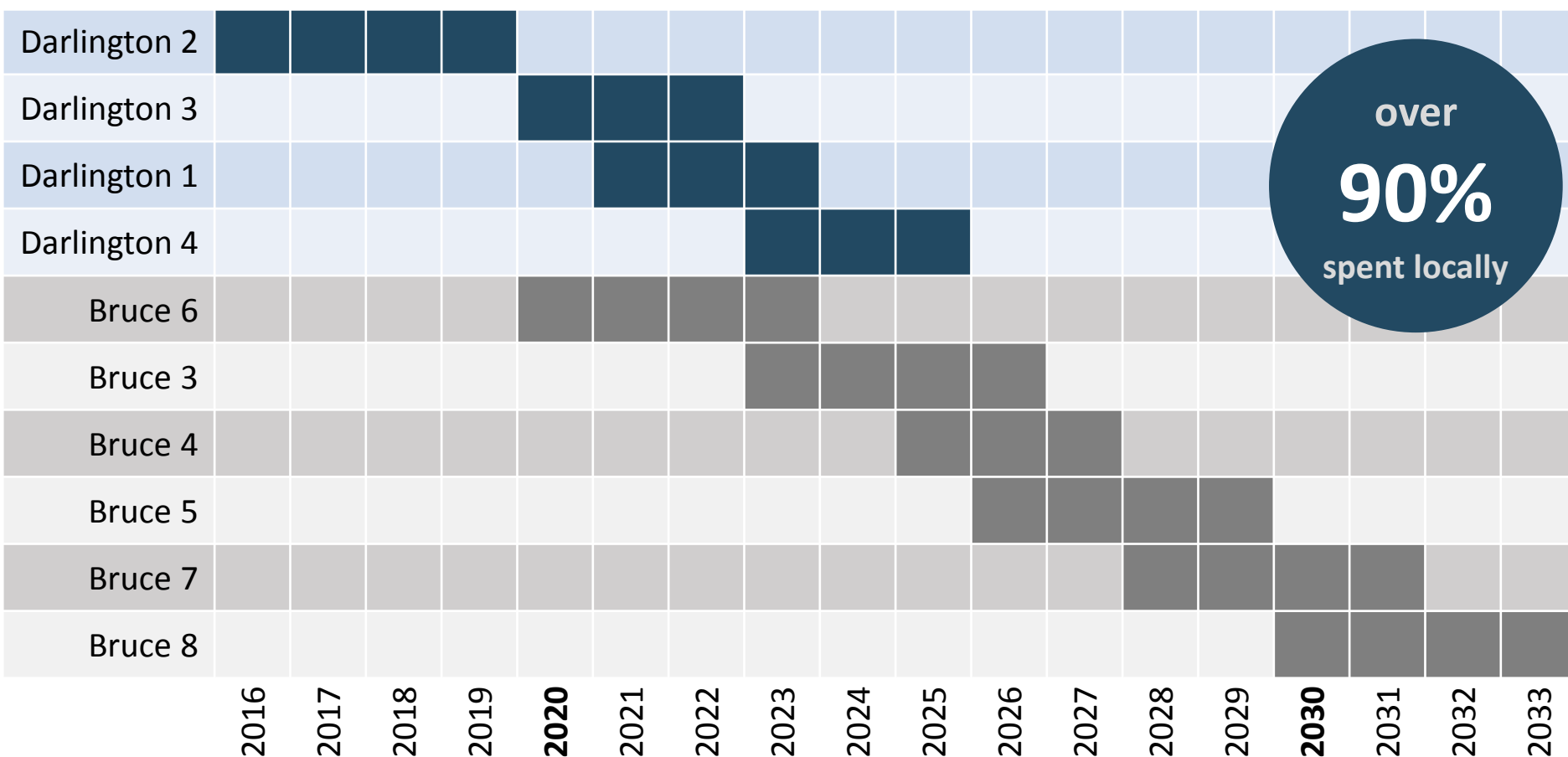


Steam Generators being assembled in BWXT's nuclear clean room in Cambridge, Ontario

Refurbishment / Major Component Replacement (MCR) – Key to Ontario's Clean Electricity System

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Clear timeline = certainty to invest in skills and new technology for Canadian companies



CRL Technology Development and/ Transfer to Private Sector supports Canadian Leadership in:

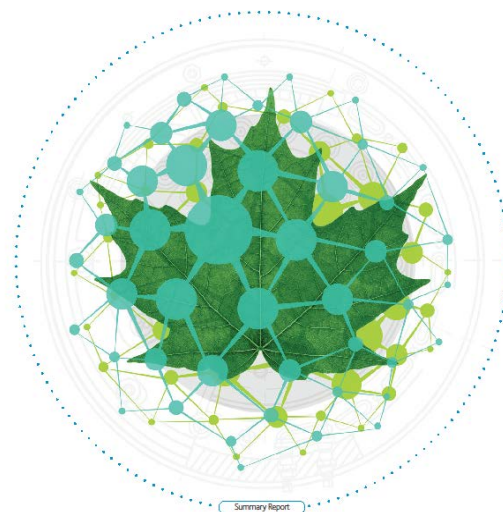
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- IT/Quantum Computing/data collection/secure communications
- Advanced materials science and manufacture
- Robotics and remote handling
- Hydrogen production – Zero GHG Transportation



CRL Leadership in Small Modular Reactor (SMR) Development and Demonstration

- Enable environmentally responsible development of Canada's natural resources
- Create economic opportunity through the availability of reliable cost-effective energy in Canada's Northern regions
- Provide ownership, management and economic partnership possibilities for indigenous communities
- Provide reliable, cost-effective and non-GHG emitting heat energy in western provinces that depend on GHG-emitting coal and natural gas



PERSPECTIVES ON CANADA'S SMR OPPORTUNITY
Summary Report: Request for Expressions of Interest—
CNL's Small Modular Reactor Strategy



CRL-> Highly Skilled Jobs on other Sectors

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CRL supports a Nuclear supply chain involves highly skilled professionals in the following

Technology development

Specialist engineering

Mining & refining

Safety & testing specialists

Mechanical components

Electrical systems

Precision manufacturing

Materials technologists

IT systems & software

Sophisticated instrumentation

Consulting services

Advanced construction



Nuclear provides skills platform for other important high-value sectors



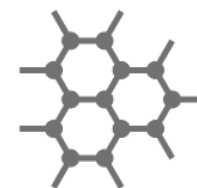
Aerospace



Adv. manufacturing



Electrification



Material science



Big data



Robotics



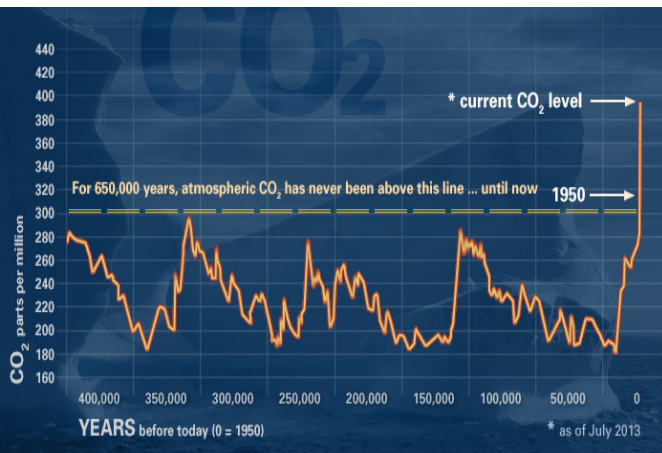
Medical tech



Complex infra

Nuclear- major role in Climate Change Mitigation and air quality improvement

- Dramatic Increase in CO₂ Levels (ref NASA)
- Driving investment in renewable generation **AND** nuclear
 - wind and solar – intermittent
 - need to embrace **all** low carbon options





Beijing



“China has always been committed to development and utilization of nuclear energy while ensuring security in the first place. This is to bridge the gap in energy supply, and address the challenges posed by climate change. China is the country with the fastest growth of nuclear power.”

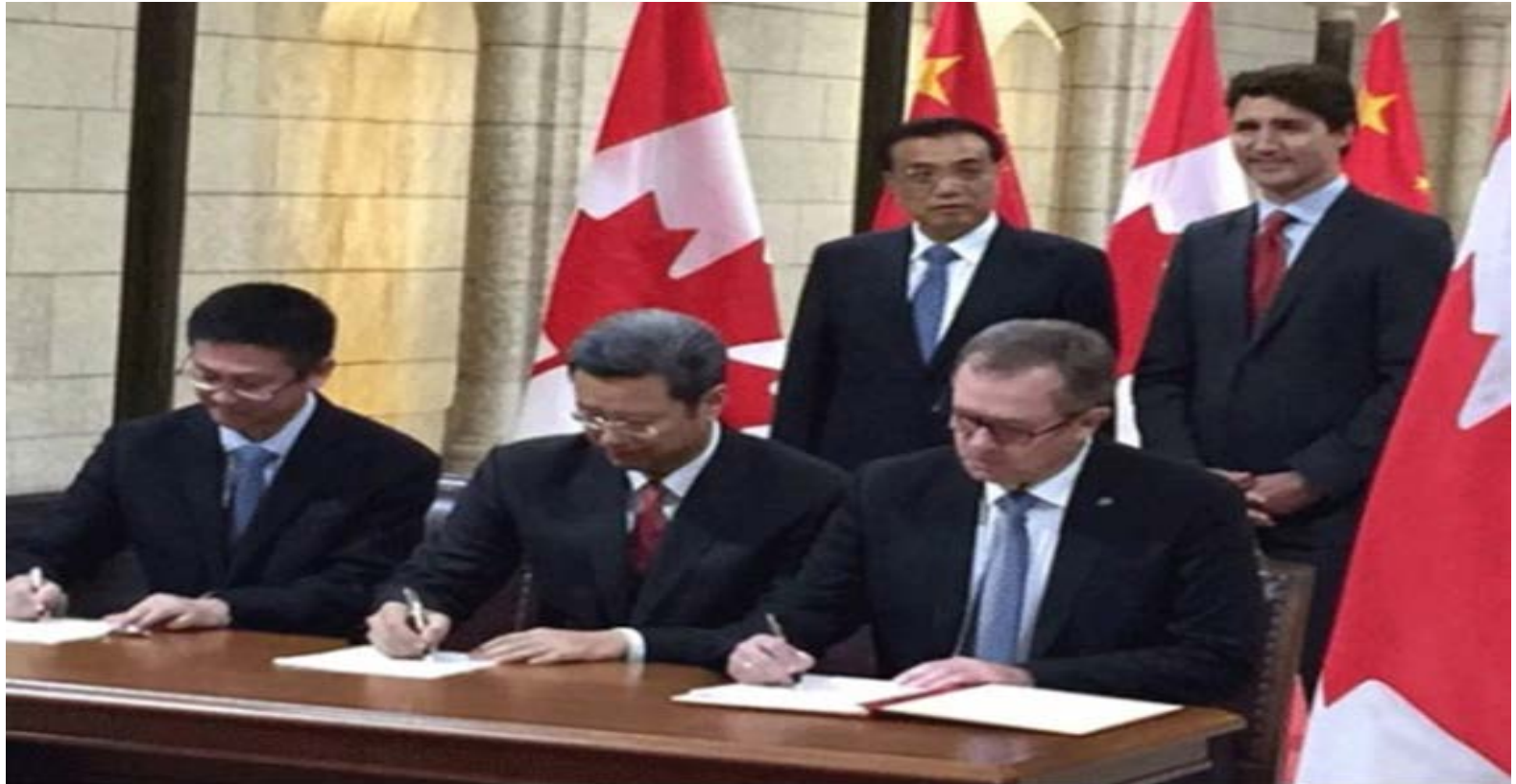
President Xi Jinping

73%

of China's electricity
from fossil fuels

CRL supports development of Advanced Fuel CANDU reactor – part of China's Climate Change Plan

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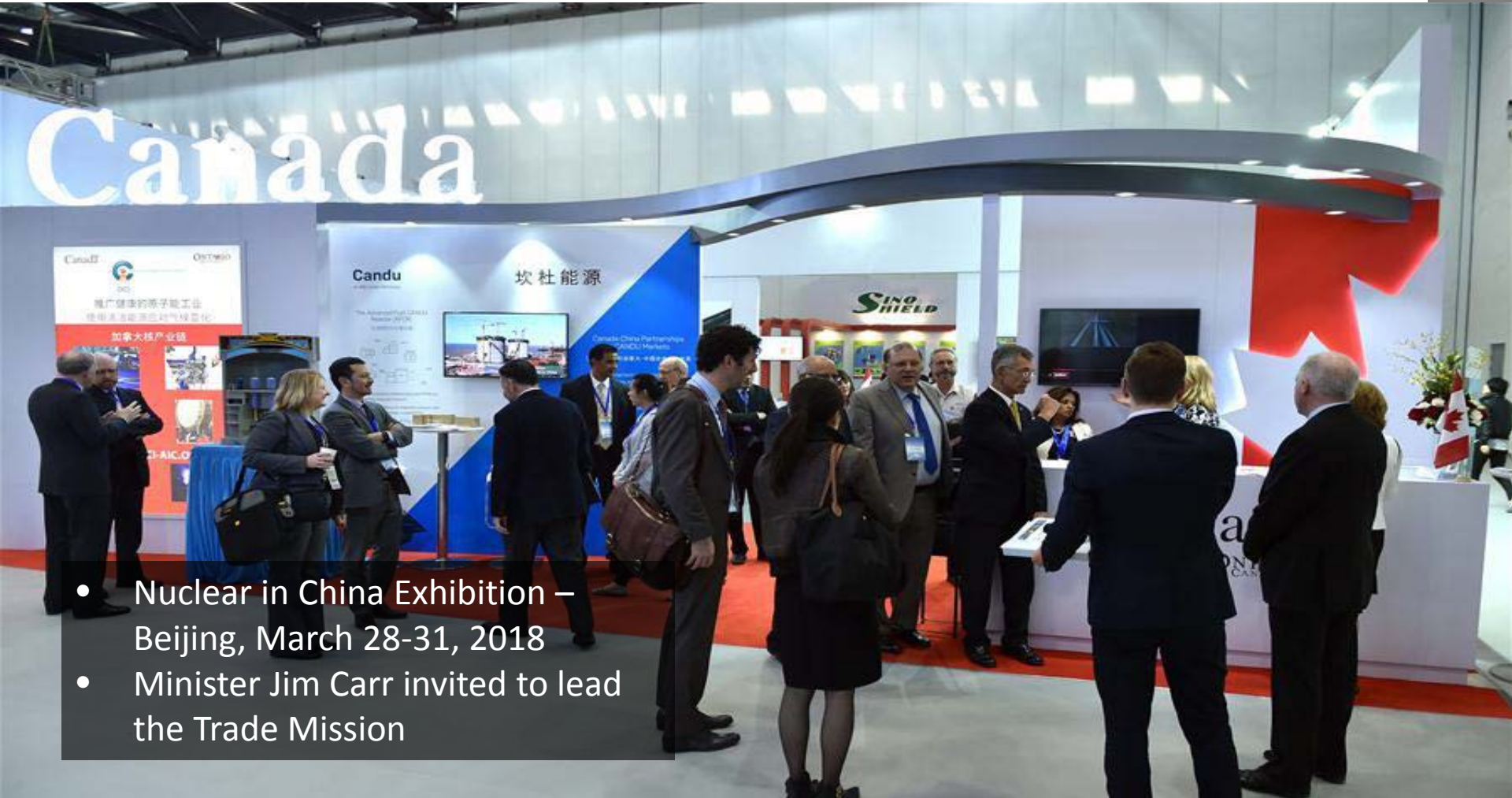


Prime Minister Justin Trudeau and Chinese Premier watching the signing of an agreement to collaborate on the Advanced Fuel CANDU Reactor.

Nuclear Trade Mission to China - March 2018

CNL will play key role

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- Nuclear in China Exhibition – Beijing, March 28-31, 2018
- Minister Jim Carr invited to lead the Trade Mission

OCNI strongly supports CNL Application to renew CRL operating license to 2028

- AECL/CNL's proven track record of safe and environmentally responsible operation of CRL Site
- CRL technology development underpins Canada's nuclear industry and its supply chain – essential role in meeting Canada's GHG reduction commitments
- CRL plays key role in deploying SMR's that will could support northern and indigenous development
- CRL supports safety and security in other industries and undertakings of national importance
- CRL plays a key role in Canada's international climate change leadership



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