TORONTO REGION
ACCELERATE INNOVATION.

GLOBALLY-RECOGNIZED CLUSTERS IN THE TORONTO REGION: NUCLEAR ENERGY

THE TORONTO REGION IS ...

- The location of the first commercial CANDU station in Pickering, and currently home to 20 of CANDU reactors: Bruce, Darlington and Pickering
- Global headquarters for Atomic Energy Canada Ltd. (AECL), the company that manufactures and markets CANDU reactors worldwide
  - 34 CANDU reactors in use around the world: 22 in Canada; 4 in South Korea; 2 each in China, India and Romania; and 1 each in Argentina and Pakistan
  - Two research and development centres located at Chalk River Nuclear Labs and Sheridan Park Research Community
- Part of a sophisticated electricity infrastructure and a growing demand for clean, reliable electricity generation:
  - Government of Ontario recently introduced the *Green Energy Act* **(GEA)** which aims to increase investment in renewable energy projects and increase conservation
  - 53% of Ontario's electricity generated by nuclear power
- A growing hub with over 120 companies that are either members of the Organization of CANDU Industries or the Canadian Nuclear Association, including: Atomic Energy Canada Ltd., Babcock & Wilcox, Bruce Power, GE-Hitachi Nuclear Canada, Hatch-Sargent & Lundy, Hitachi Canada, Nuclear Safety Solutions, Ontario Power Generation, Siemens Canada, SNC-Lavalin Nuclear, and Stern Laboratories
- The centre of a $5-6B per year Canadian nuclear industry with a workforce of approximately 30,000
- Producing an educated and highly-skilled workforce: over 2,900 university graduates (all levels) in related programs in 2008

A Sophisticated Electricity Infrastructure

Photo: Ontario Power Generation

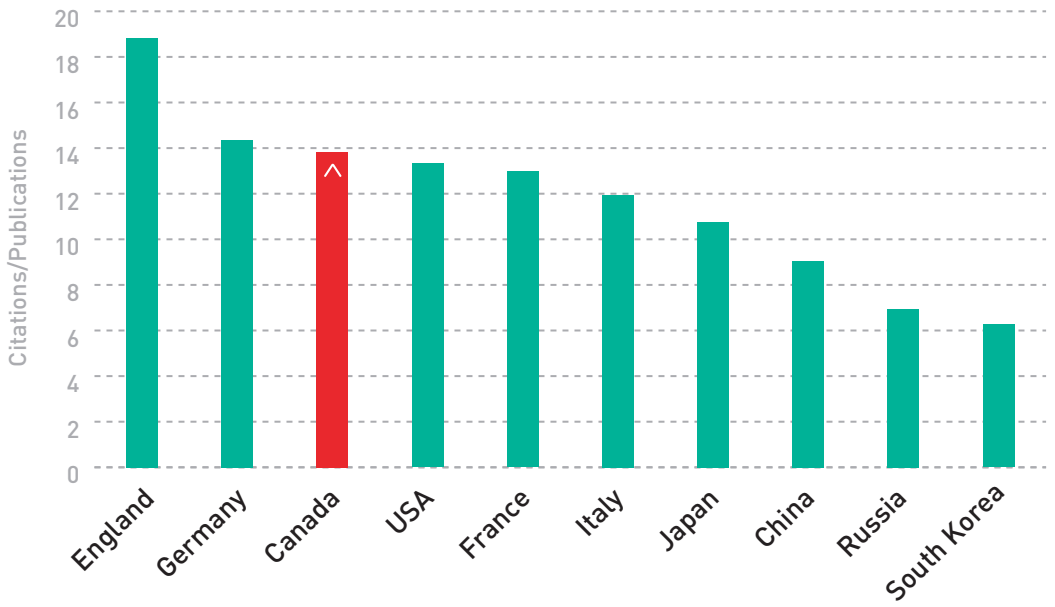
CANDU nuclear power makes up 53% of the energy mix used every day in Ontario homes and businesses – 15% of Canada's total electricity.

ADVANTAGES

- A world-leading economic region:
  - Ranked #1 for the soundness of its banking system by World Economic Forum (*Global Competitiveness Report 2008-2009*)
  - Ranked #3 in North America by MasterCard's Worldwide Centres of Commerce (2008)
  - Ranked #7 Top City Regions of the Future by Foreign Direct Investment magazine (2009)
  - Ranked #10 of the World's Top Global Cities (Global Cities Index (2008)
  - Ranked #10 most economically powerful city by Forbes.com (July 2008)
  - Ranked #11 of 62 in the 2009 Global Financial Cities Index
- 7.4 million people live in the Toronto Region, making it the 4th largest urban region in North America
- Immigration responsive to company needs:
  - Uncapped number of work permits available to foreign workers
  - Process for intra-company transfers is fast and straightforward
  - Special programs allow employers to permanently recruit high-end research staff and other workers within defined occupations
- Business-friendly environment:
  - Canada ranked #1 in number of procedures required to start a business, and #2 in time required to start a business (World Economic Forum, *Global Competitiveness Report 2008-2009*)
  - Ranked #4 globally for Ease of Doing Business by MasterCard Worldwide Center of Commerce Index (2008)
- Canada's largest centre for research and education – location for 35% of all R&D conducted in Canada
- Highly-skilled workforce of 1.8 million (25-64 years of age) drawn from the most educated population in the G8: 64% hold a post-secondary degree or equivalent
- Part of a well-developed transportation infrastructure – air, rail and highway corridors – that easily moves people and goods to cities in the US Midwest and Northeast

High Scientific Impact for Canadian Publications

Citations per Publication by Country (2000-2009)



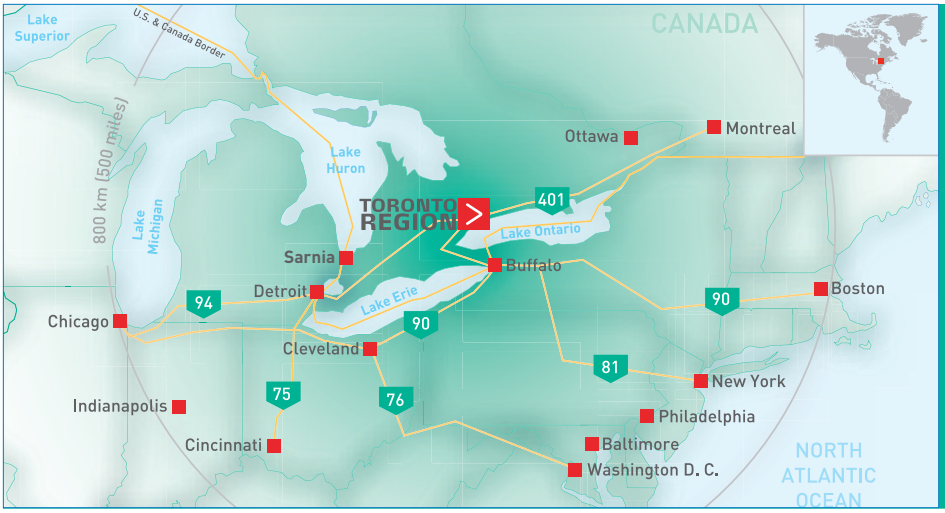
Source: ISI

WORLD-LEADING RESEARCH AND EDUCATION

- Toronto Region universities are a hub of research excellence recognized by major Canadian granting agencies:
  - 8 region universities are members of the University Network of Excellence in Nuclear Engineering (UNENE), a Canadian-based alliance of universities, nuclear power utilities, research and regulatory agencies for the support and development of nuclear education, research and development capability in Canadian universities
  - Natural Sciences and Engineering Research Council (NSERC) awarded $3.4 million to 92 nuclear-related research projects in the Toronto Region, 2000-2010
  - Canada Foundation for Innovation (CFI) awarded $12 million to 6 nuclear-related research projects in the Toronto Region, 2000-2010
  - Canadian Institutes for Health Research (CIHR) awarded $1.5 million to 10 nuclear medicine related research projects in the Toronto Region, 2000-2010
  - 16 NSERC/UNENE Industrial Research Chairs (IRC) in physics and nuclear medicine
- A centre of advanced research and development based in Toronto Region universities, including:
  - **McMaster University**: McMaster Nuclear Reactor (MNR), McMaster Institute for Applied Radiation Sciences, McMaster Institute for Energy Studies, McMaster Accelerator Laboratory, Radioisotopes Laboratories, High Level Facility, Pre-clinical Imaging Facility, Sustainable Energy Systems Laboratory
  - **University of Ontario Institute of Technology**: School of Energy Systems and Nuclear Science
  - **University of Toronto**: Centre for Nuclear Engineering, Department of Chemical Engineering and Applied Chemistry

Web Links

Toronto Region Research Alliance www.trra.ca
Atomic Energy of Canada Limited www.aecl.ca
McMaster University www.mcmaster.ca
University of Toronto www.utoronto.ca
University of Waterloo www.uwaterloo.ca
Canadian Nuclear Association www.cna.ca
Canadian Nuclear Society www.cns-snc.ca
Canadian Nuclear Safety Commission www.nuclearsafety.gc.ca
University Network of Excellence in Nuclear Engineering (UNENE) http://www.unene.ca



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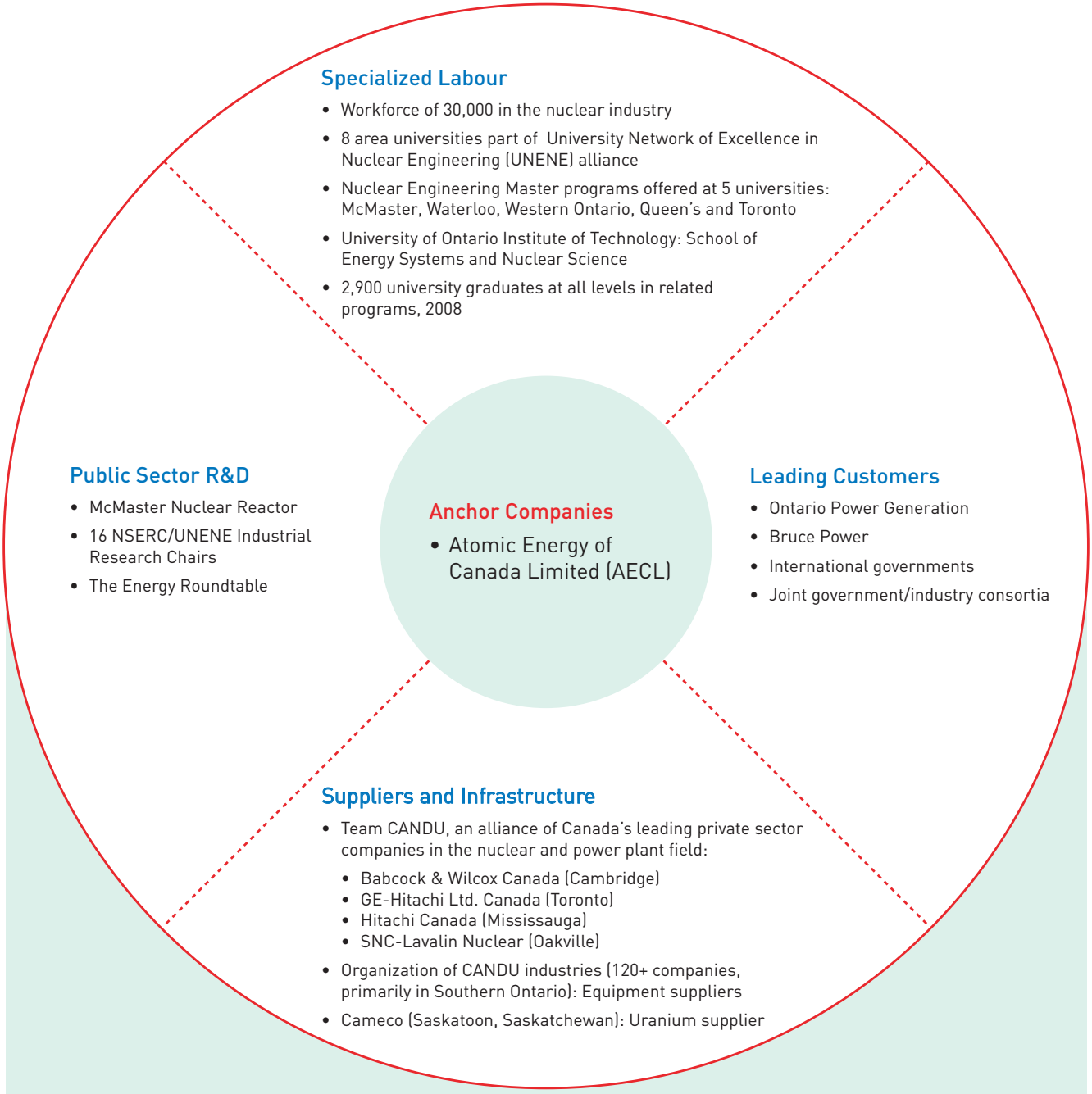
Toronto Region's nuclear energy cluster evolved around CANDU heavy water reactor technology



SPECIFIC REGULATORY AND INCENTIVE SUPPORT

- All third-party liability is channeled to the operator
- Operator's liability is limited