# **Expanding Capabilities Through Collaboration With Universities**

Michael Murchie Director, Innovation & Technology Development Cameco Corporation 7 December 2010

## Double











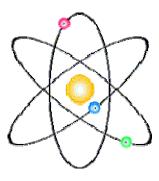
Safe, clean, reliable.

Doubling uranium production by 2018.



### **Outline**

- Cameco
- Nuclear fuel cycle
- Cameco operations
- Collaboration
- Status
  - What works well
  - Challenges
  - Opportunities for improvement



#### Cameco





Vision: Cameco will be a dominant nuclear energy company producing uranium fuel and generating clean electricity

Revenue (2009) \$2.31

**\$2.315** billion

Net earnings (2009)

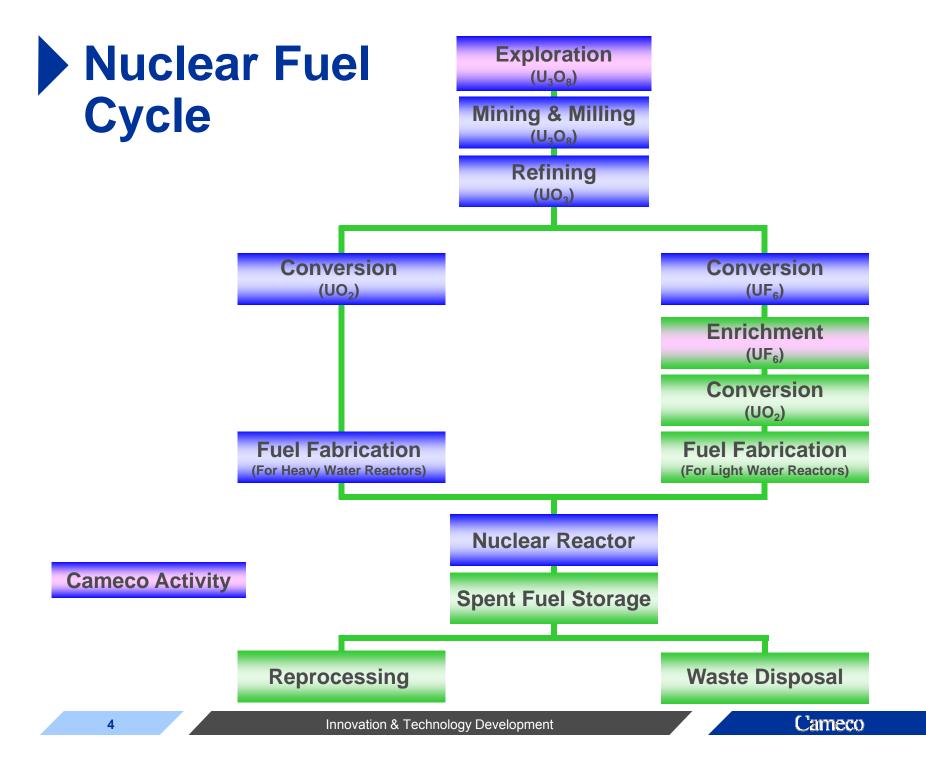
\$582 million

**Employees** 

3,000

Total assets (2009)

**\$7.342** billion



### **Cameco Operations**

- Operations around the world
- Mining operations in Canada, the U.S. and Kazakhstan
- Development properties in Canada and Australia
- Refining and conversion assets in Ontario, Canada
- Toll agreement with conversion plant in UK
- Fuel manufacturing plant in Ontario, Canada
- Partner in Global Laser Enrichment

#### Cameco's Stated Goal:

Double annual uranium production to 40 million lb. U<sub>3</sub>O<sub>8</sub> by 2018

How do we meet the demands of this production and technological challenge?

### **Meeting the Demand**

#### Internal focus

- Assess and adjust internal workforce, expertise
- Improve business practices innovate

#### External focus

- Collaboration
- Alliances

**Expand our** Capabilities











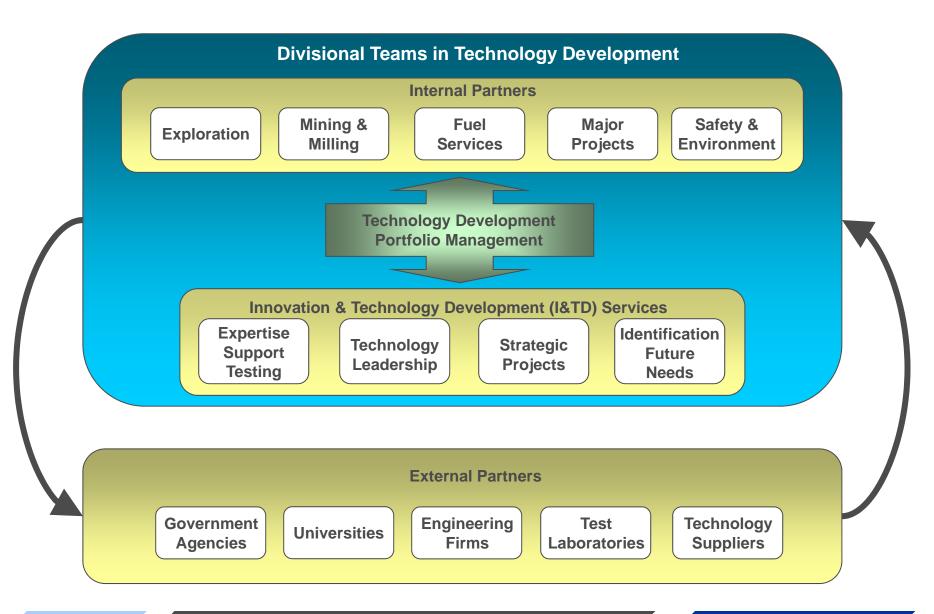




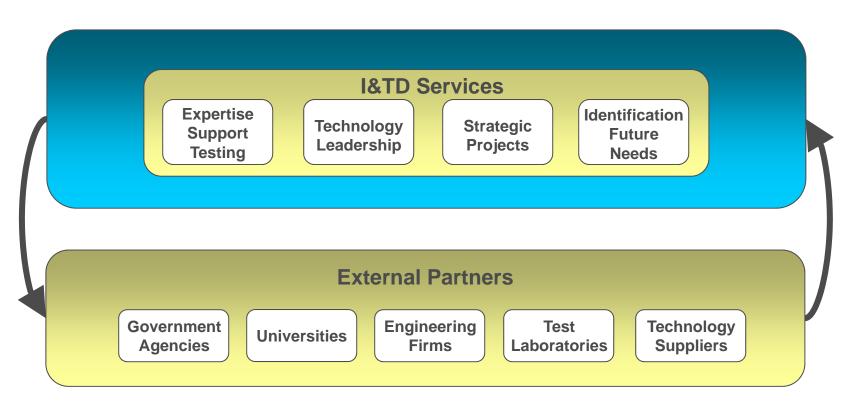




#### **Collaboration with External Partners**



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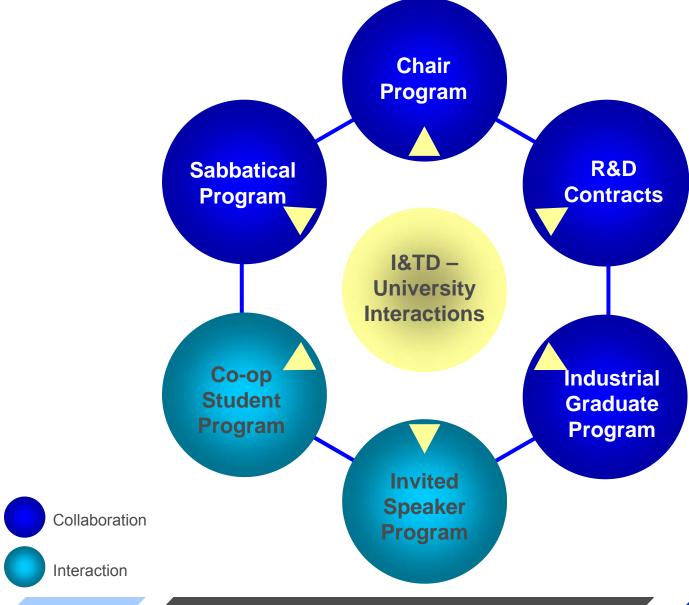
### **I&TD** – University Collaboration

#### Objectives:

- Strategy and process whereby I&TD identifies and capitalizes on technologies, innovations and ideas to serve Cameco's interests
- Capabilities of I&TD expanded through collaboration with high quality
  R&D organizations enhanced research output
- Greater coordination and collaboration in seeking access to higher levels of research funding
- Training of students to become future workforce in nuclear industry
- Flexibility

Establish a culture of collaboration, optimize research efficiency, and enhance innovation potential

### **I&TD** – University Interactions



### **I&TD** – University Collaboration

#### Chair program

3 university chairs + 1 in 2011

#### Sabbatical program

- Researcher embedded with Cameco (6 months 1 year)
- Conducts R&D and generates ideas for future projects
- Conduit for future interaction with involvement of graduate students

#### R&D contracts

- Focused
- Collaborative research agreements
- Leveraged industry funds NSERC, OCE

#### Industrial PhD or Masters degree program

- New in 2010
- 1 Masters + 1 PhD
- Working on real issues

#### **Example of Collaborative Research**





#### **Novel Analyzer**



- One-of-a-kind instrument
- Reduced analysis time
- Enable change to operating procedures
- Environmental benefit
- Financial benefit

#### Potential Future Applications

Primary Operation

Additional Operations

Analytical Laboratories

**External Markets** 

#### **What Works Well**

- Technologies developed and implemented that are of value to Cameco
- University research programs are supported
- More eyes on the problem
- Some examples of streamlined university processes
  - Confidentiality agreements
  - Collaborative research agreements
  - Flexibility on IP issues
- Invested time to learn about Cameco
- Researcher prepared to work at Cameco operations/labs

**FLEXIBILITY** 

### **Challenges**

- Inefficient tools and processes
  - Too much time spent negotiating and implementing collaborative agreements
- Change in our own mindset
  - Fear factor loss of IP, loss of ideas, loss of control
- Change in university researcher mindset
  - Collaboration must be designed to be mutually beneficial
- Urge or need to patent/publish
- Need to keep internal expertise and knowledge within the company
- Organizational adjustments required
- Culture change highly regulated environment

### **Opportunities for Improvement**

- Understanding of each others culture, wants, needs
- Be willing to adapt and incorporate or tolerate changes
- Benchmark
  - Cameco
  - University
- Standardization of processes
- Standard document templates
- Framework agreements
- Expectations regarding IP clear understanding at start

**FLEXIBILITY** 

### Thank you

