



Leading the Next Generation CANDU Technology



Robert Van Adel
President & CEO



AECL
Atomic Energy
of Canada Limited

EACL
Énergie atomique
du Canada limitée

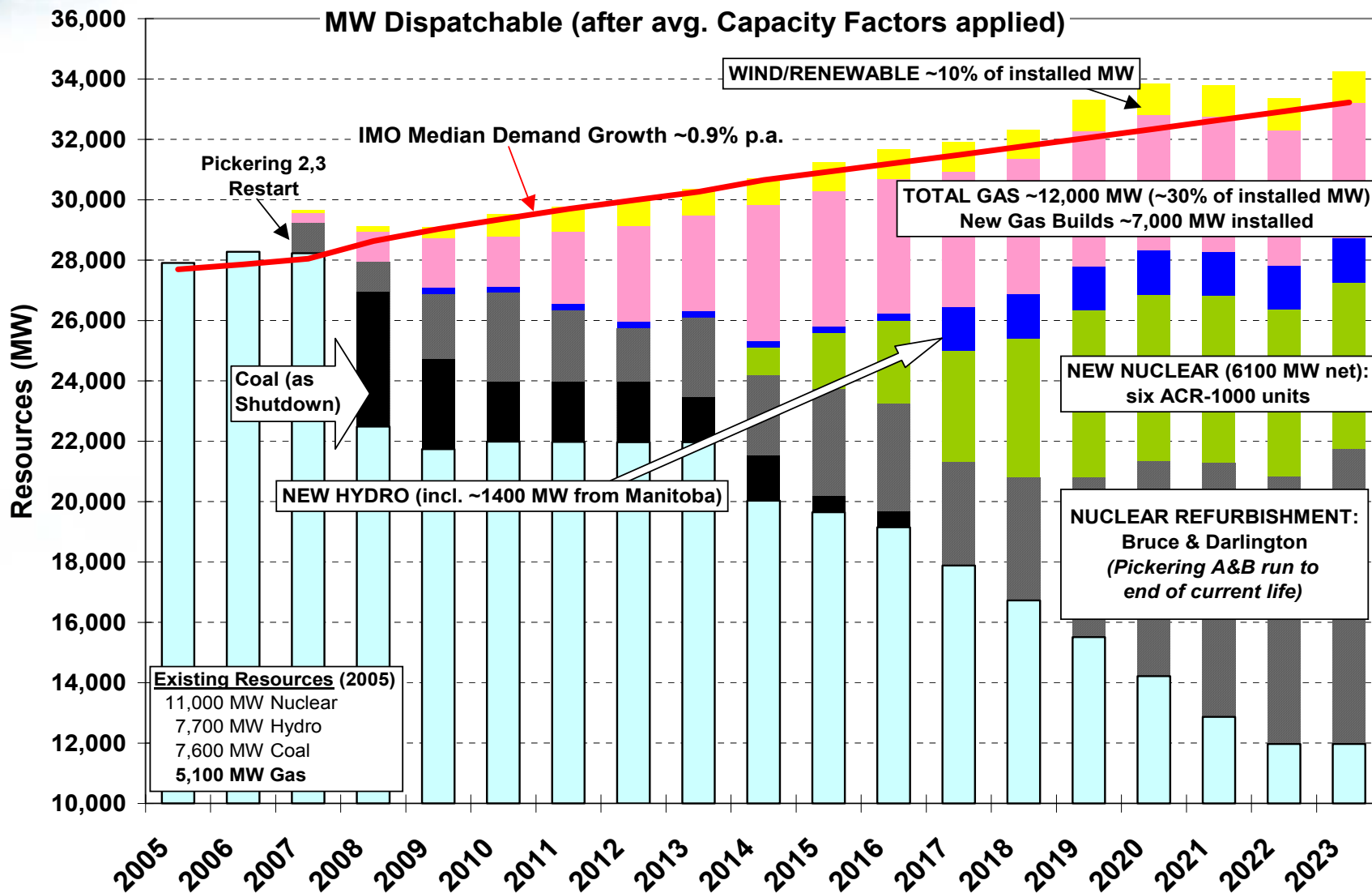


Leading the Next Generation CANDU Technology

- ✧ Governments faced with tough decisions
- ✧ Challenging energy gap looming
 - *Adopting more renewables, conservation*
 - *Revitalization of **CANDU** in Ontario*
- ✧ The only viable baseload technology option
 - **Replace CANDU with CANDU**



Electricity Supply Mix - Gas 30% Max.

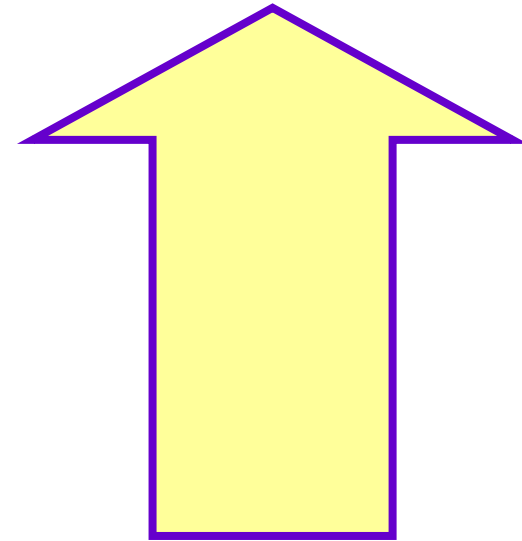




Advanced CANDU Technology Solutions

Total Life Cycle approach supported by Supply Chain including:

- ✓ Refurbishment
- ✓ Reactors
- ✓ Services
- ✓ Waste Management
- ✓ Delivery Capability



***Resulting in Large
Benefits to Canada***



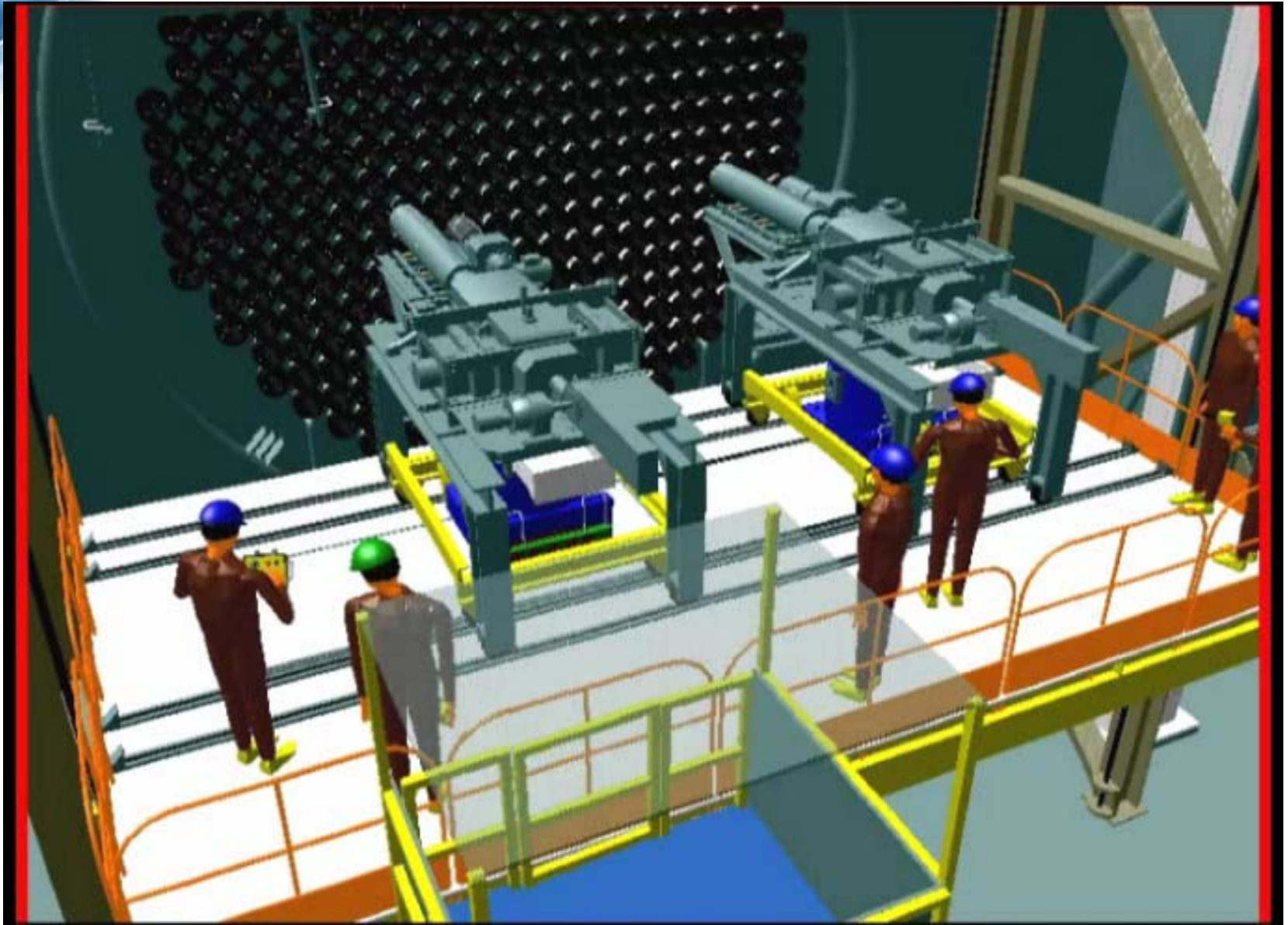
Refurbishment Technology

- ☆ Refurbishment precedes new build
- ☆ CANDU life-extended for decades
- ☆ Strong demand worldwide – economic & timely
- ☆ Bruce and Pickering units on line in 2004
- ☆ Bruce and Lepreau projects soon
- ☆ Gentilly 2, Korea, Argentina to follow



CANDU Refurbishment Technology

- ☆ AECL R&D innovation for safe, efficient retube
- ☆ AECL invested in re-tube technology for “heart transplant”
- ☆ Advanced tooling reduces waste by-products
- ☆ Advance planning, training & simulation are key
- ☆ Outsourced projects by strong utility partners
- ☆ Provides infrastructure & capability to launch new build ACR **from Canada**





CANDU Reactor Technology

- ☆ **CANDU 6**: world class performance, contemporary, excellent build record
- ☆ Replication project in China possible
- ☆ AECL building Unit 2, negotiating Unit 3 in Romania
- ☆ ACR (Advanced CANDU Reactor) builds on C6 success
 - *Reduces costs & schedule*
 - *Most economic future technology*



CANDU 6:

- ✓ **Available now**
- ✓ **Low-risk option for Ontario**



Advanced CANDU Reactor Technology

- ✧ ACR –1000 competitive product
 - *Ready in 2008 /2009*
 - *Strong Government support*
- ✧ ACR technology endorsed in U.S.
 - *ACR opportunity ... after first build US design*
- ✧ ACR only viable future baseload option in Ontario
- ✧ SCWR leads Gen IV Design



**Canada, US, China, UK =
ACR-1000 markets**



Nuclear Services Technology

- ✧ Industry success depends on operator performance
- ✧ Reactor life cycle services key to safety & reliability
- ✧ Chalk River provides unique 24/ 7 R&D support
– *Ongoing plant performance research*
- ✧ “Smart CANDU” remotely monitors performance
- ✧ AECL technology sold to CANDU and non-CANDU customers – **France, US, Japan**



Waste Management Technology

- ✧ National Labs support waste technology
- ✧ AECL has deep-rock disposal solution
- ✧ AECL has solution **now** for spent fuel:
 - **MACSTOR** – *renewable, 100 yr. solution*
- ✧ AECL R&D:
New waste technologies:
 - **IRUS**

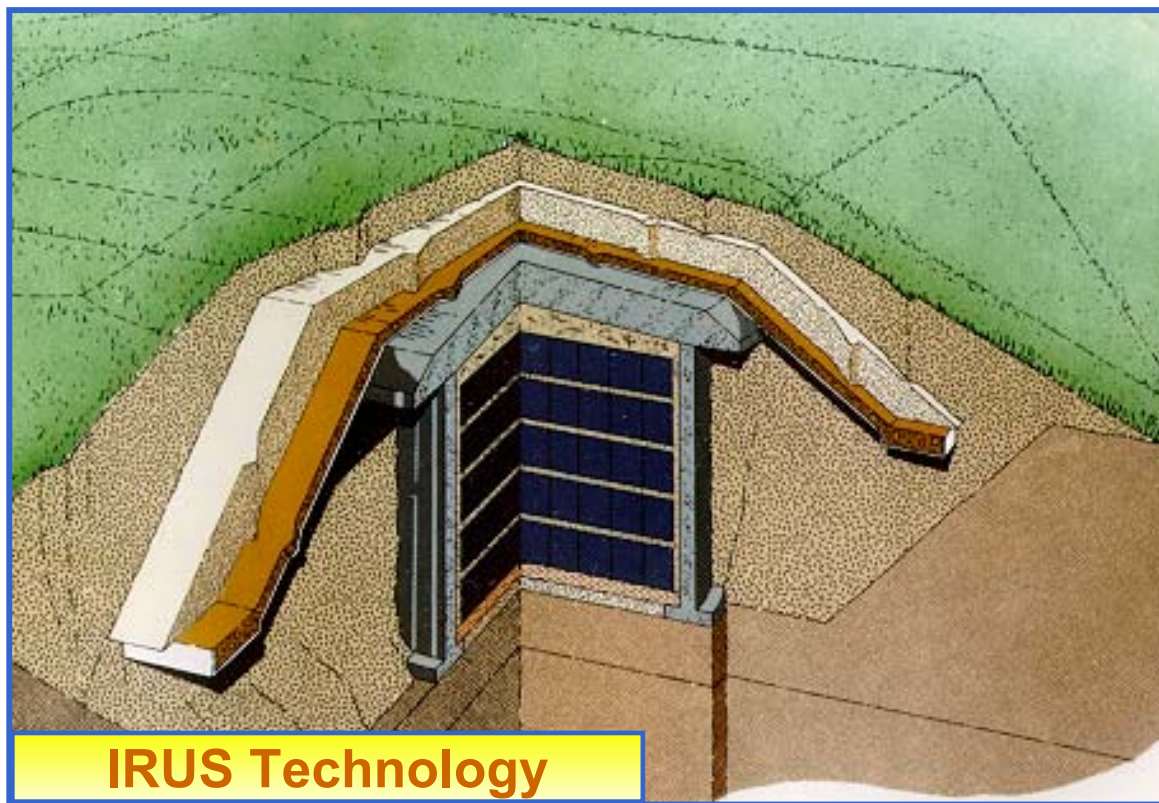


MACSTOR®

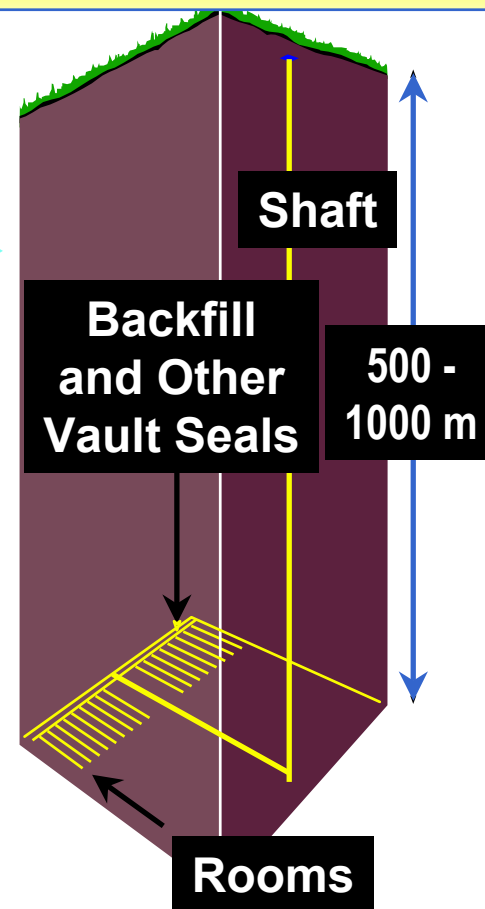


Waste Management Technology

DEEP-ROCK DISPOSAL



IRUS Technology





Delivery Capability

Improving Management / Governance

- ✓ Building on solid project mgt./ global contracting
- ✓ Strengthened Commercial disciplines: Customer focus
- ✓ Business Units: P & L
- ✓ Strengthened safety culture
- ✓ **Regulatory**: Reinforced high standards to meet / exceed
- ✓ Quality & Process Improvement
- ✓ Transparency & Accountability



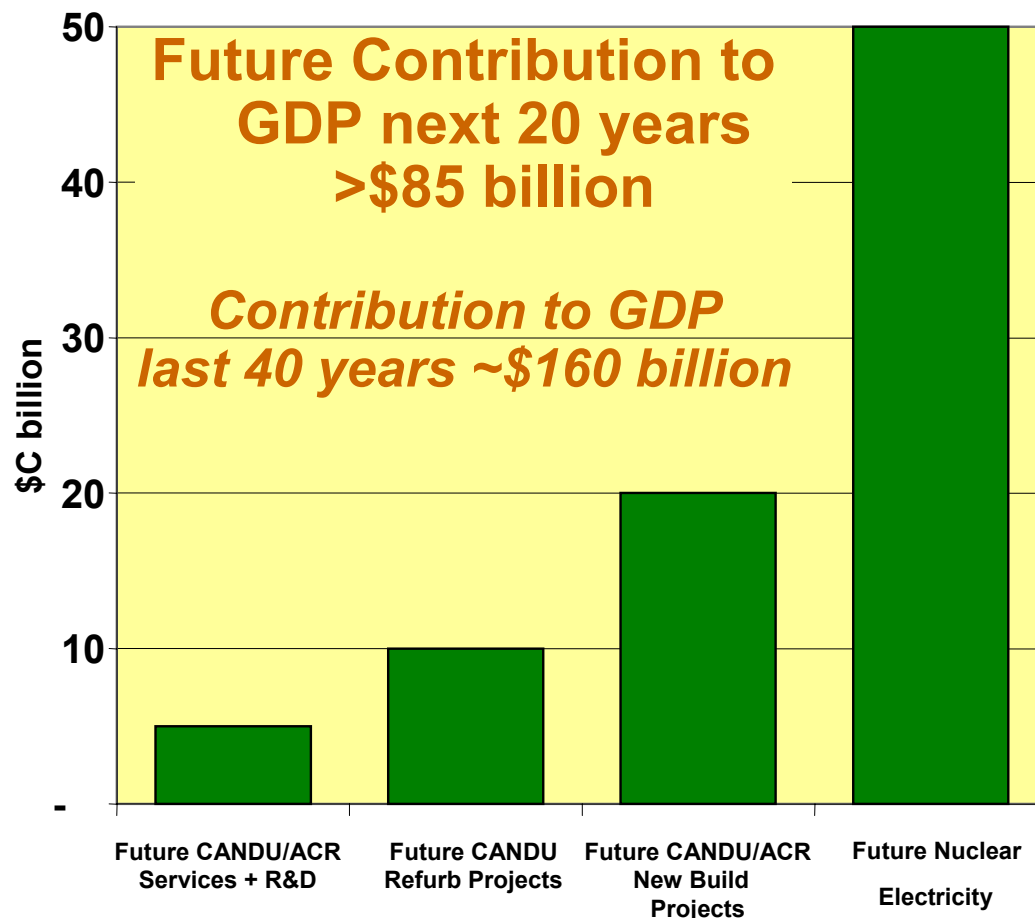
CANDU: Benefits to Canada

CANDU is Canadian:

- ✓ 30,000 jobs
- ✓ 150 companies
- ✓ \$5 billion / yr. industry

Essential to meeting Kyoto commitments:

- ✓ Clean air benefit up to 100 MT GHG/ yr.
- ✓ One ACR station will avoid 14 MT GHG/ yr.





Conclusions

- ✓ Canada is CANDU country – Federal & public support
- ✓ Must maintain investment in new build options to compete
- ✓ Government decisions supporting refurbishment and EA needed
- ✓ Team CANDU ready to go now
- ✓ **CANDU**: Key to secure & economic power, maximizes high-tech jobs, quality of life, cleaner environment

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AECL
EACL