Urtek Presentation to NRC

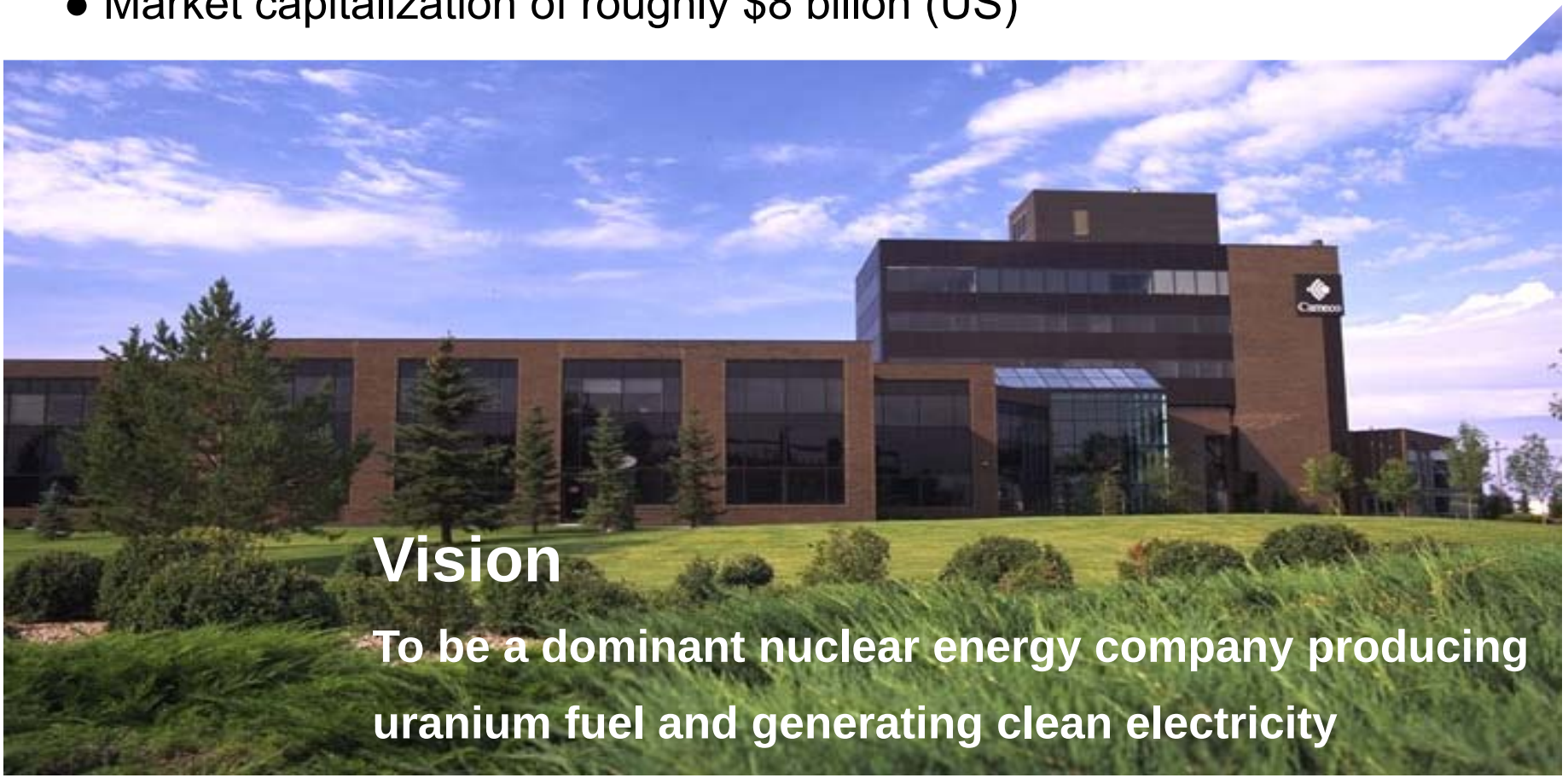
Aug 20th 2013

Overview

- Cameco background
- Urtek background
- PhosEnergy process overview
- Urtek activities update:
  - Engineering study highlights
  - Demonstration Plant
- 2013 plans

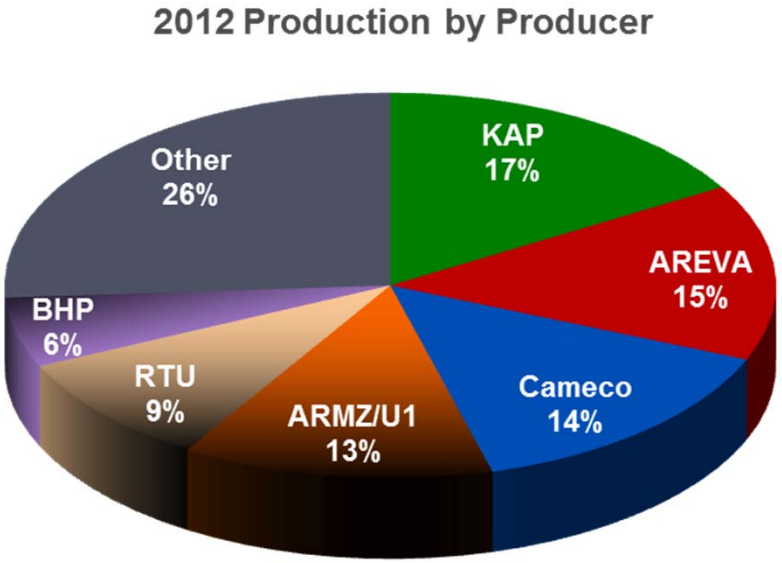
Cameco Background

- One of the world's largest uranium producers
- Publicly traded on the Toronto and New York stock exchanges
- Market capitalization of roughly $8 billon (US)



Cameco - Uranium Production

- Total world production ~ 152 million lbs U_3O_8 in 2012
- Cameco is one of the world's largest producers
  - 14% of world production - 21.9 million lbs U_3O_8 produced in 2012



Cameco – Global Mining Activities

Current Operations

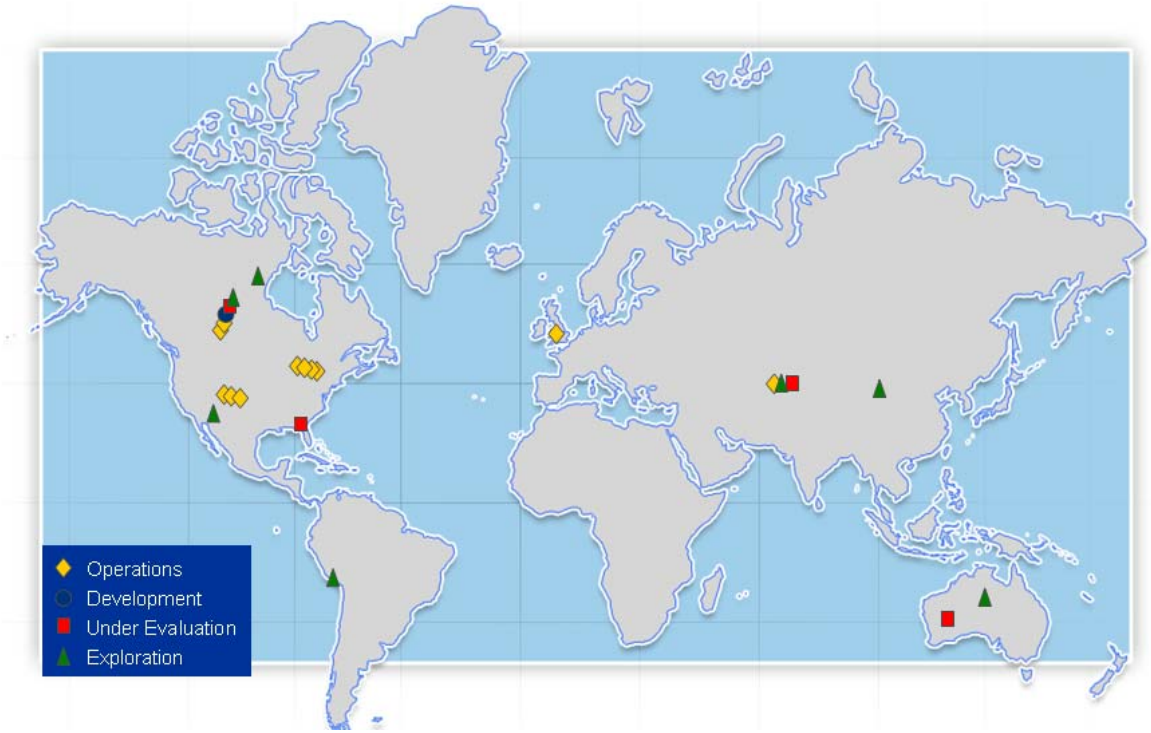
- McArthur River – Canada
- Rabbit Lake – Canada
- Smith Ranch – Highland – US
- Crow Butte – US
- JV Inkai – Kazakhstan

Under Development

- Cigar Lake – Canada

Advanced Exploration

- Kintyre – Australia
- Millennium – Canada
- Yeelirrie - Australia



Cameco – US Operations

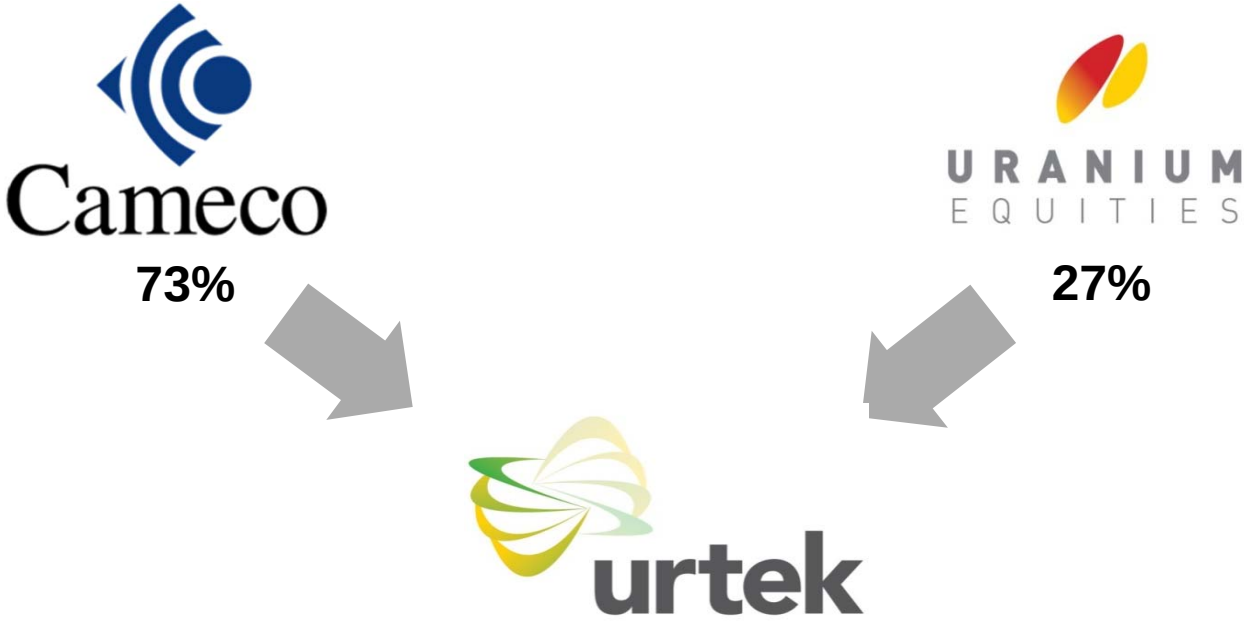
- Cameco Resources - largest uranium producer in the US
- Smith Ranch - Highland operation in Wyoming
  - Licensed mining capacity of 3 million lbs per year and milling capacity of 5.5 million lbs per year
- Over half of Cameco's production sold into US markets
- Cameco sells uranium to almost all US nuclear utilities

Crow Butte, Nebraska

Smith Ranch - Highland, Wyoming

Urtek Background

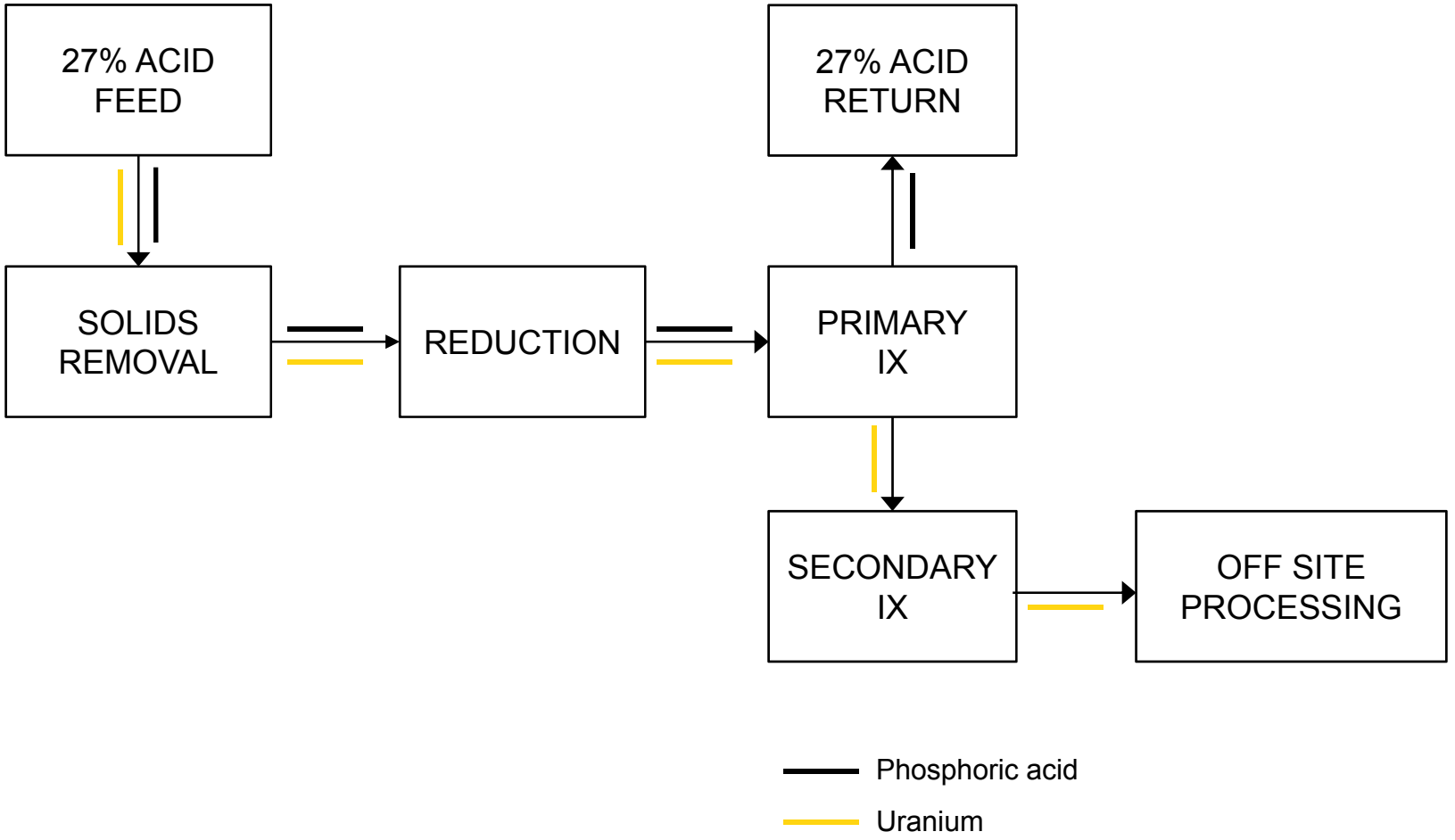
- Colorado limited liability company, formed in 2005
- Developer and owner of the patented PhosEnergy Process
- Clear focus on uranium extraction from phosphates
- Cameco initial investment in 2009, now 73% owner



Urtek Background

- Since inception, Urtek has been developing alternatives to the historic solvent extraction (SX) process
- Continued development has resulted in significant refinements and simplification over original concepts
- Patented ion-exchange (IX) based technology sets Urtek apart from others:
  - Lower cost
  - Improved environmental outcomes
  - Sustainable process (economically, environmentally, and operationally)

PhosEnergy Process Flow Sheet



PhosEnergy Process

- Key flow sheet features:
  - No detrimental effects on phosphate streams
  - No solid waste produced (no crud)
  - Processing of resin to produce uranium concentrate can occur either on-site or at an existing off-site uranium mill

Urtek Activity Update

- Conducted continuous test work since 2007
- Construction of demonstration plant (DP) in 2011
- Operated DP at research facility in Colorado in 2012
  - Completed four test campaigns over a five month period on acid from two different fertilizer facilities
- Completed independent engineering study on the PhosEnergy Process in Q1 2013

Engineering Study Highlights

- Design criteria derived from the DP fed into the engineering study
- Engineering study illustrates construction of a commercial extraction facility in SE US, but can be modified to reflect site specific factors at any phosphate plant

Conceptual Commercial Extraction Facility

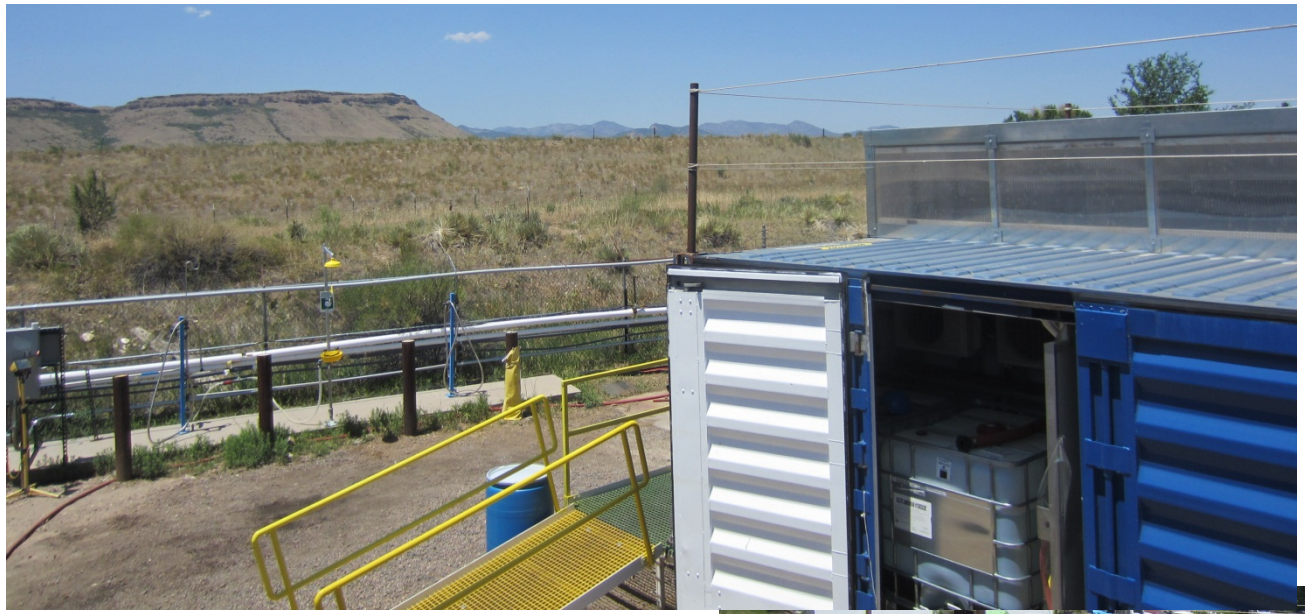
Engineering Study Highlights

- Engineering study assumed 1 million ton per annum P_2O_5 plant producing 880,000 lbs U_3O_8 per annum
- Capital cost of US$156 million
- Cash operating costs of <US$18/lb (including transport and toll-milling of loaded resin)
  - Within lowest cost quartile of all uranium production worldwide
- Potential for further cost refinements
- Commercial facility could be constructed within three years of starting Definitive Feasibility Study

Demonstration Plant

- Constructed in 2 x 40 foot shipping containers
- Fully process controlled, and integrated with all key unit operations represented
- Self contained, with internal secondary containment and off-gas management
- Design flow of 0.66 gpm of 27% acid

URTEK DEMONSTRATION PLANT



URTEK DP

WEST ENTRANCE

Reagent Storage

URTEK DEMONSTRATION PLANT

CONTAINER 1

PRIMARY IX, SECONDARY IX,
REAGENT STORAGE

CONTAINER 2

FGA STORAGE & PRETREATMENT,
PROCESS WATER, OFFGAS HANDLING,

Demonstration Plant Operation

- Highlights of DP operations in 2012 include:
  - Safe operation maintained
  - Uranium extraction maintained at >95% during steady-state operation
  - No deleterious elements affected loading after multiple cycles
  - All wastes and off-gases analysed
  - All loaded SIX resin transported via DOT certified carriers within approved containers to a licensed milling facility

2013 Operational Plan

- Urtek recently announced an agreement with a US based phosphate producer, which initially contemplates:
  - Operation of Urtek's DP beginning Q3 2013; and
  - Completion of a site-specific pre-feasibility study for the opportunity in early 2014;
- This will allow the parties to make a decision to proceed with further studies and, potentially, commercial operation

2013 Operational Plan

- The Urtek Demonstration Plant was designed and built to operate within the general license limits set by 10 CFR Part 40 being:
  - 15lb of source material held at any time; and
  - 150lb of source material per year
- To date Urtek has operated within these limits with loaded SIX resin from the operation of the DP being transported to a licensed milling facility for processing.

Discussion

- Discussion regarding potential impact of recent amendments to 10 CFR Part 40