



## **Honeymoon Uranium Project, South Australia**

Near term production with substantial exploration upside in underexplored Uranium Province

Investors presentation, February 2016

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The information in this presentation that relates to Exploration Results and Mineral Resources is based on information compiled by Dr. M. Abzalov, who is a Competent Person according to the JORC 2012 Code. Dr. M. Abzalov is a Fellow of the AusIMM. He has sufficient experience in estimation Resources of uranium mineralisation, and have a strong expertise in the all aspects of the data collection, interpretation and geostatistical analysis to qualify as a Competent Person as defined in the 2012 Edition of the ‘Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves’. Dr. M. Abzalov is employed as a director of Boss Resources Ltd. Dr. M. Abzalov consents to the inclusion in the report of the matters based on their information in the form and context in which it appears. This information was initially reported to the ASX on 1 September 2015 and 20 January 2016 and has not materially changed.

The information in this presentation that relates to the Honeymoon Project Exploration Target and associated Exploration Data is based on information provided by Mr. Neil Inwood, who is a Fellow of the AUSIMM. Consent is granted only for the purposes of outlining an Exploration Target, no warranty is made on the use of the exploration information and data for other purposes. Mr Inwood is a consulting geologist and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity undertaken to qualify as Competent Persons as defined in the 2012 edition of the “Australasian Code for Reporting of Mineral Resources and Ore Reserves”. Mr. Inwood has consented to the inclusion of this information in this document in the form and context in which it appears. An entity associated with Mr Inwood has shares in Boss Resources Ltd. This information was initially reported to the ASX on 8 December 2015 and has not materially changed.

The Exploration Target is conceptual in nature as there has been insufficient exploration to define a Mineral Resource. It is uncertain if further exploration will result in the determination of a Mineral Resource under the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, the JORC Code” (JORC 2004). The Exploration Target is not being reported as part of any Mineral Resource or Ore Reserve.



# HIGHLIGHTS



## PERMITTED

Fully permitted Uranium operation (only 1 of 4 in Australia)



## TARGET

100mlb exploration target  
Huge 80+ km potentially mineralised strike  
2,600km under explored uranium province  
27mlb U3O8 JORC Resource



## INFRASTRUCTURE

\$170m plant and infrastructure in place



## LOW CAPEX

Unique option on Uranium price – operations can commence with low CAPEX targeting cash costs of <\$25/lb production



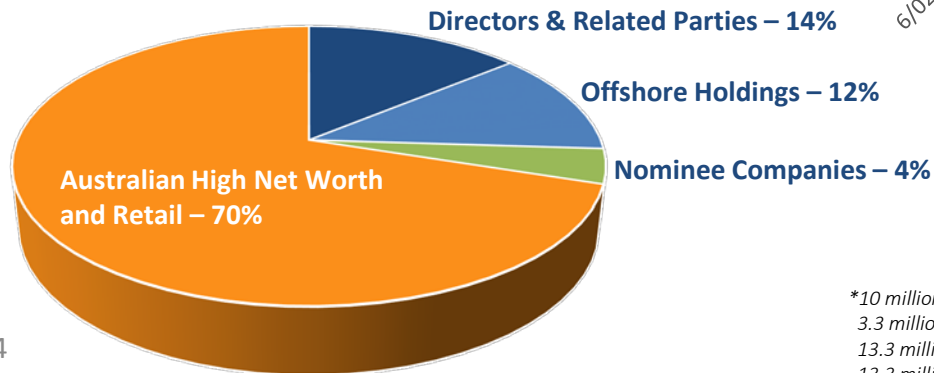
# CORPORATE STRUCTURE

<b>Existing Shares (ASX:BOE)</b>	<b>855 million</b>
<b>Performance Rights*</b>	<b>40 million</b>
<b>Options (\$0.02 Aug 18)</b>	<b>10 million</b>
<b>Cash (31 Dec 2015)</b>	<b>\$2.4 million</b>
<b>Market Capitalisation (at \$0.042)</b>	<b>\$36 million</b>
<b>Top 100 Shareholders</b>	<b>~ 80%</b>

## Share Price Movement



## Shareholder Breakdown



\*10 million rights convert if share price is greater than 7.5c for 20 consecutive ASX trading days  
 3.3 million rights convert if share price is greater than 8.5c for 20 consecutive ASX trading days  
 13.3 million rights convert on discovery and decision to mine of 75kt Ni JORC resource on Scandinavian Projects  
 13.3 million rights convert on discovery and decision to mine of 125kt Ni JORC resource on Scandinavian Projects

# DIRECTORS

- **Evan Cranston**

*Chairman*

Mr. Cranston is a corporate lawyer with experience in publicly listed entities including capital raisings, offerings, and liaison with market analysts and investors.

- **Marat Abzalov**

*Executive Director - Geology*

Mr. Abzalov has a PhD in Geology. Marat has recently completed an invited study of ISL styles of mineralization, including those in Australia. He is also an ex-Exploration manager for Rio Tinto Eurasia, with extensive experience in Kazakhstan uranium projects.

- **Grant Davey**

*Executive Director*

Mr Davey is a mining engineer with 20 years of senior management and operational experience in the construction and operation of Uranium, gold, platinum and coal mines in Africa, Australia, South America and Russia.

- **Peter Williams**

*Technical Director*

Mr. Williams is an explorationist/geophysicist with over 30 years experience. He has extensive experience in West Africa, Australia, Fennoscandia, and Canada.



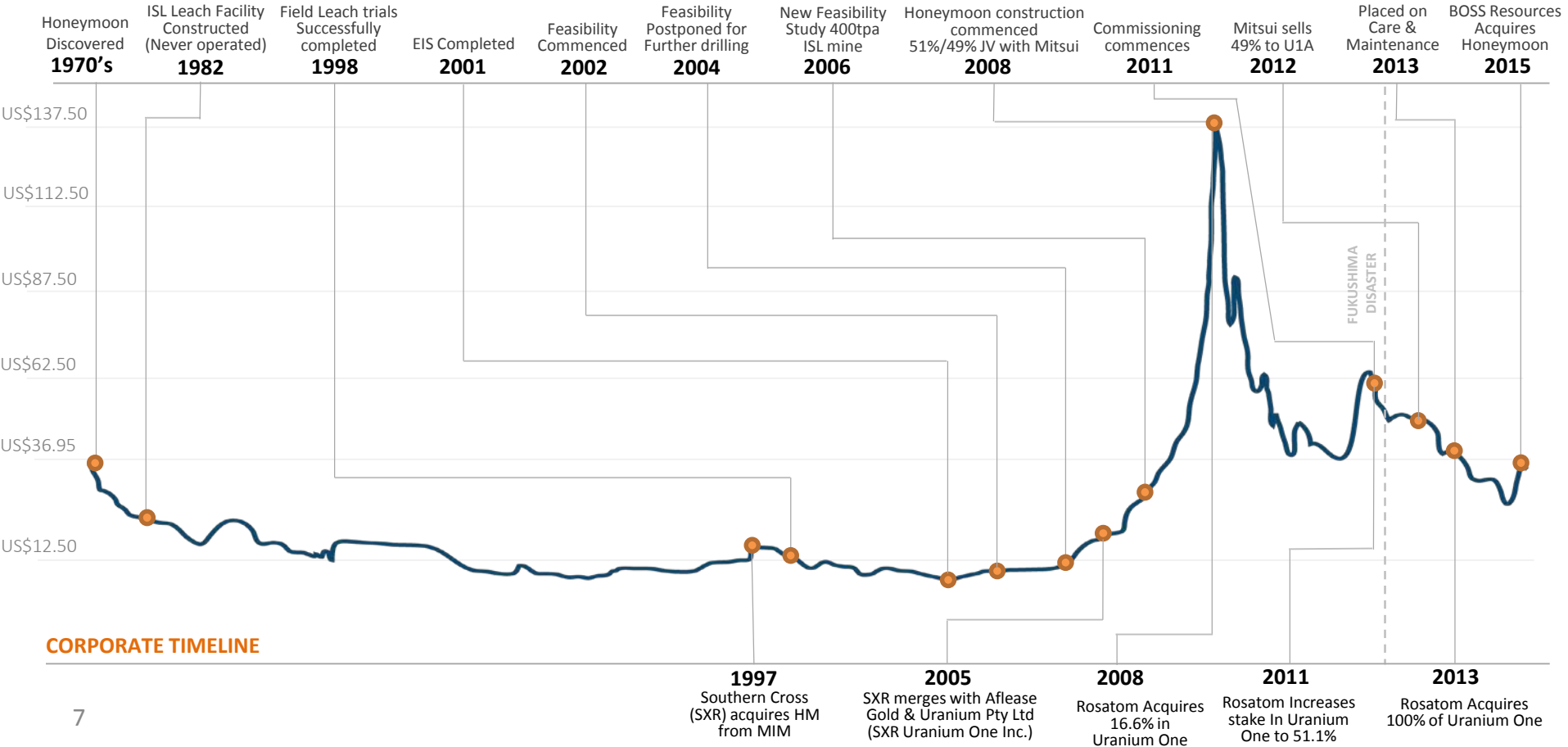
# PEER COMPARISON

## ASX LISTED STOCKS

Company	Initial Capex (AUD\$)	Mining Permit	Resource mlb	Grade PPM	Mining Type	Market Cap	CI Costs US\$/lb	Comments
<b>Toro Energy</b> (ASX:TOE)	315m	X	75.3	485	Bulk surface	\$124m	33	\$29.5m invested by Sentient
<b>Vimey (Energy &amp; Minerals)</b> (ASX:VMY)	378m	X	65.6	520	Surface	\$68m	23	RCF provided \$30m funding
<b>Peninsula Resources</b> (ASX:PEN)	46m (stage 1)	✓	51.2 (Lance Deposit)	476	ISL	\$158m	43	Recent raising \$69m RCF, Paladin, Blackrock, JP Morgan
<b>Berkeley Resources</b> (ASX:BKY)	169m	X	84.0	483	Hard rock Open pit	\$86m	24	In feasibility studies
<b>Energia</b> (ASX:EMX)	190m	X	18.4	310	ISL	\$19m	20	Sold to Paladin \$15.8m exploration project
<b>Boss Resources</b> (ASX:BOE)	Constructed	✓	27.6	820	ISL	\$36m	Target <25	

# HONEYMOON

## PROJECT TIMELINE



# HONEYMOON

## TRANSACTION

- Acquiring 80% of Uranium 1 Australia Pty Ltd (option to acquire 100%)
  - 20% free carried to DFS acquisition at independent valuation
- Site access fee A\$200,000 payable on signing HOA - PAID
- A\$2.48 million payable 3 months after signing SPA
- A\$3 million payable on anniversary of 2 years of signing the SPA
- A\$4 million payable on anniversary of 4 years of signing SPA
- Later of 5 years or 3 months of production
  - A\$2 million in cash or Boss shares (our elective)
  - A\$3 million from Net Operating Cash Flow (10% per annum)





# AUSTRALIAN

## URANIUM PROJECTS

- One of the highest grade un-mined uranium resources in Australia
- 1 of 4 fully permitted uranium projects in Australia (3 in South Australia)
- Curnamona Basin – a significant underexplored uranium province
- Exploration target of up to 100 Mlb  $U_3O_8$  on 2600km<sup>2</sup> of tenement area
- Currently on care and maintenance



# HONEYMOON RESOURCE

Significant existing high-grade resources – highest grade amongst ASX listed peers

**2016 Honeymoon Project Mineral Resource**  
**Covering the Honeymoon, East Kalkaroo and Brooks Dam Deposits**  
**Reported Above a preferred 250ppm eU<sub>3</sub>O<sub>8</sub> lower cut-off.**

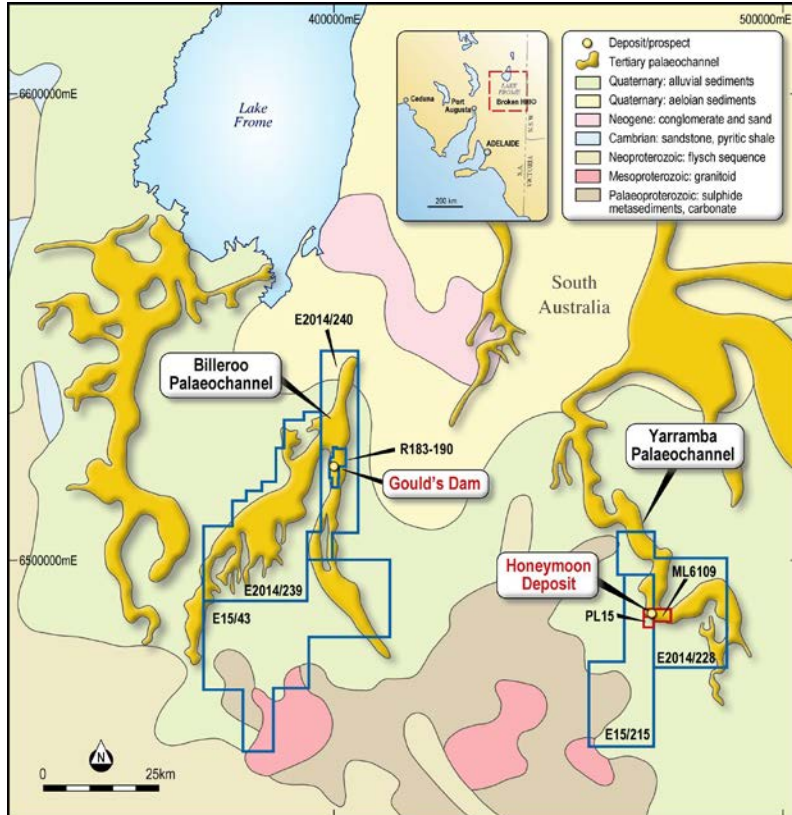
<b>Classification</b>	<b>Million Tonnes</b>	<b>eU<sub>3</sub>O<sub>8</sub> ppm</b>	<b>Contained U<sub>3</sub>O<sub>8</sub> (M Kg)</b>	<b>Contained U<sub>3</sub>O<sub>8</sub> (M Lb)</b>
<b>Measured</b>	1.7	1720	2.95	6.51
<b>Indicated</b>	1.5	1270	1.92	4.24
<b>Inferred</b>	12.0	640	7.62	16.8
<b>Total</b>	<b>15.2</b>	<b>820</b>	<b>12.50</b>	<b>27.56</b>

Note: Figures have been rounded. Quoted resources have been adjusted to exclude previous production of approximately 335t of U<sub>3</sub>O<sub>8</sub>.



# HONEYMOON

## URANIUM PROJECT



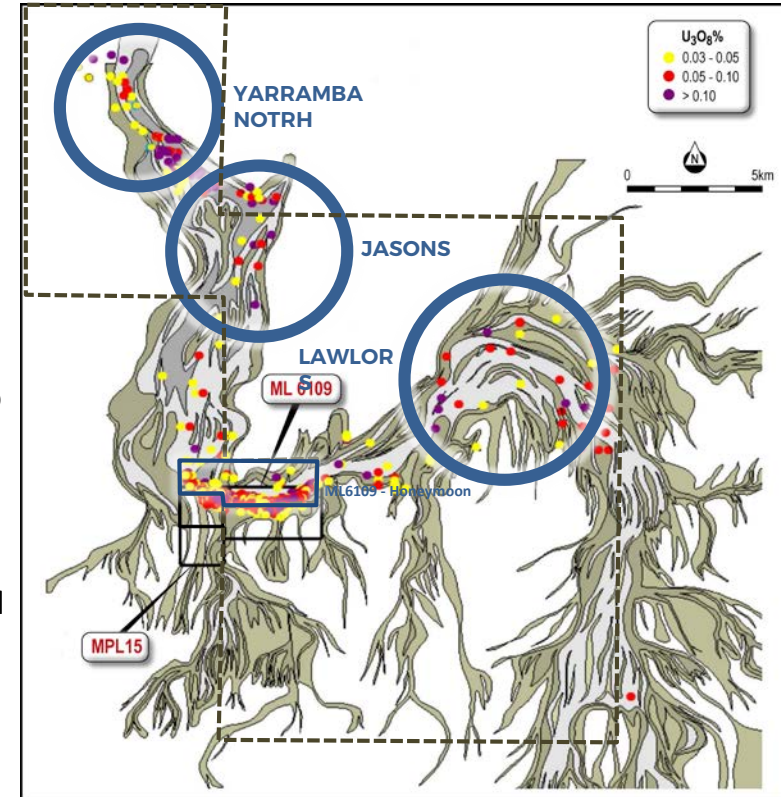
- Located 75Km NW of Broken Hill, in the Curnamona Region of South Australia
- Project contains the Honey Moon Resource, a high-grade sandstone hosted Uranium deposit amenable to insitu-leach mining techniques
- Holdings include the granted Honey Moon ML, 4 EL's and 8 RL's
- Mineralisation occurs at 90-120m depth in unconsolidated sand aquifers at the base of a Palaeochannel
- Over 2,500 historical and recent drill holes have been completed between 1960-2012
- Recent airborne electromagnetic survey has outlined significant targets warranting further investigation
- Multiple styles of uranium mineralisation identified



# EASTERN TENEMENTS

## EXPLORATION POTENTIAL

- Recently upgraded resource increase by 66% - 2 months from acquisition
- Regional exploration target of 11-25Mt at between 380 and 1200 ppm  $U_3O_8$  for between 18-47MLb of contained  $U_3O$  on Eastern Tenements<sup>1</sup>
- 30 km of potentially mineralised strike
- Drill ready targets - historical drilling shows numerous > 1,000ppm  $U_3O_8$  intercepts associated with well defined paleo channels.
  - Three priority regions – Yarramba, Jasons and Lawlors.
  - Early potential for resource definition
- Regional scale assessment recently undertaken - Airborne EM survey conducted to identify Tertiary palaeochannels with brackish groundwater: prospective host for uranium mineralisation
- Advanced targeting model utilising numerical prospect scoring system developed

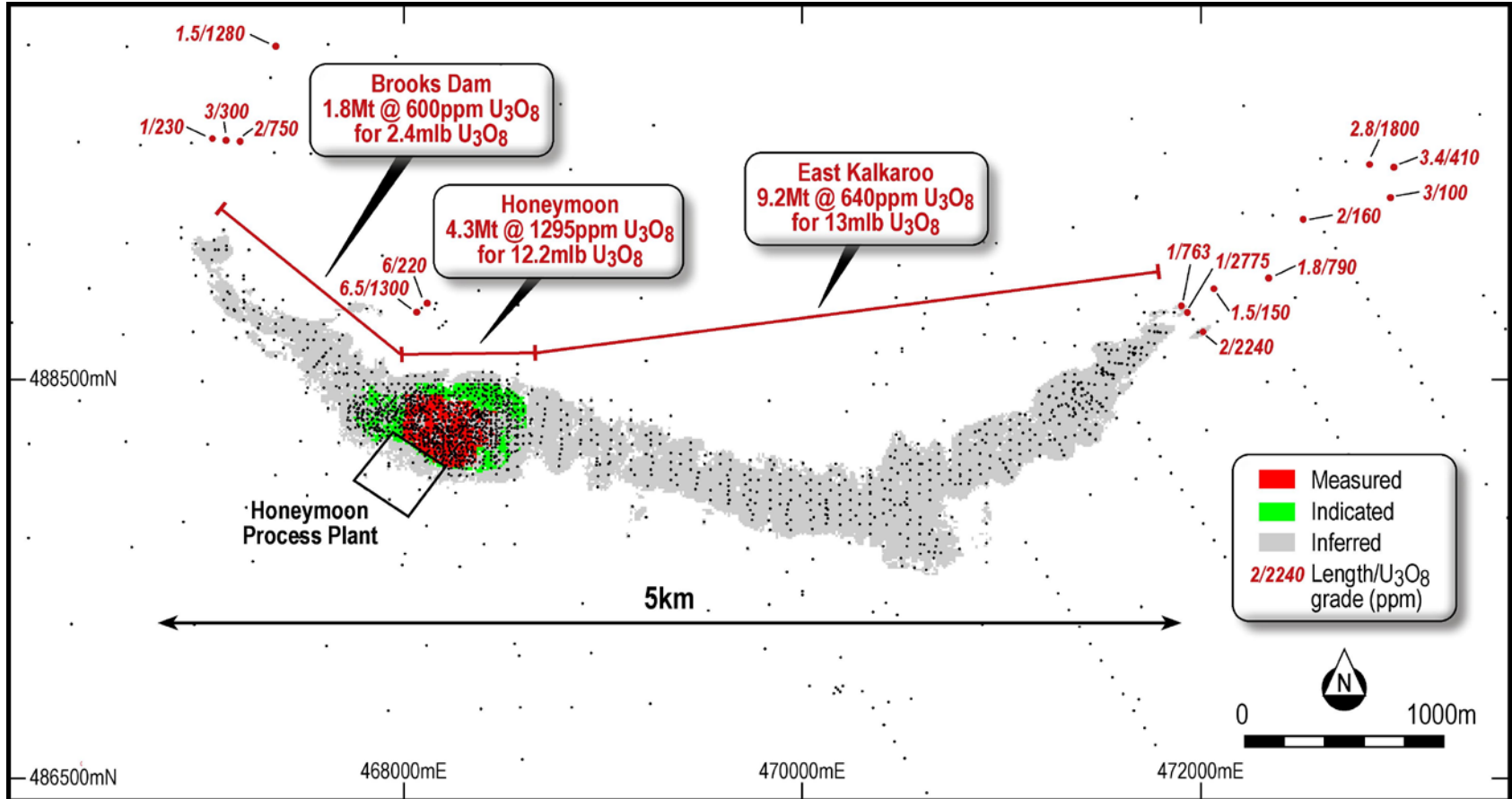


Historical & Recent Drilling Intercepts

<sup>1</sup>The Exploration Target is conceptual in nature as there has been insufficient exploration to define a Mineral Resource. It is uncertain if further exploration will result in the determination of a Mineral Resource under the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, the JORC Code" (JORC 2004). The Exploration Target is not being reported as part of any Mineral Resource or Ore Reserve.

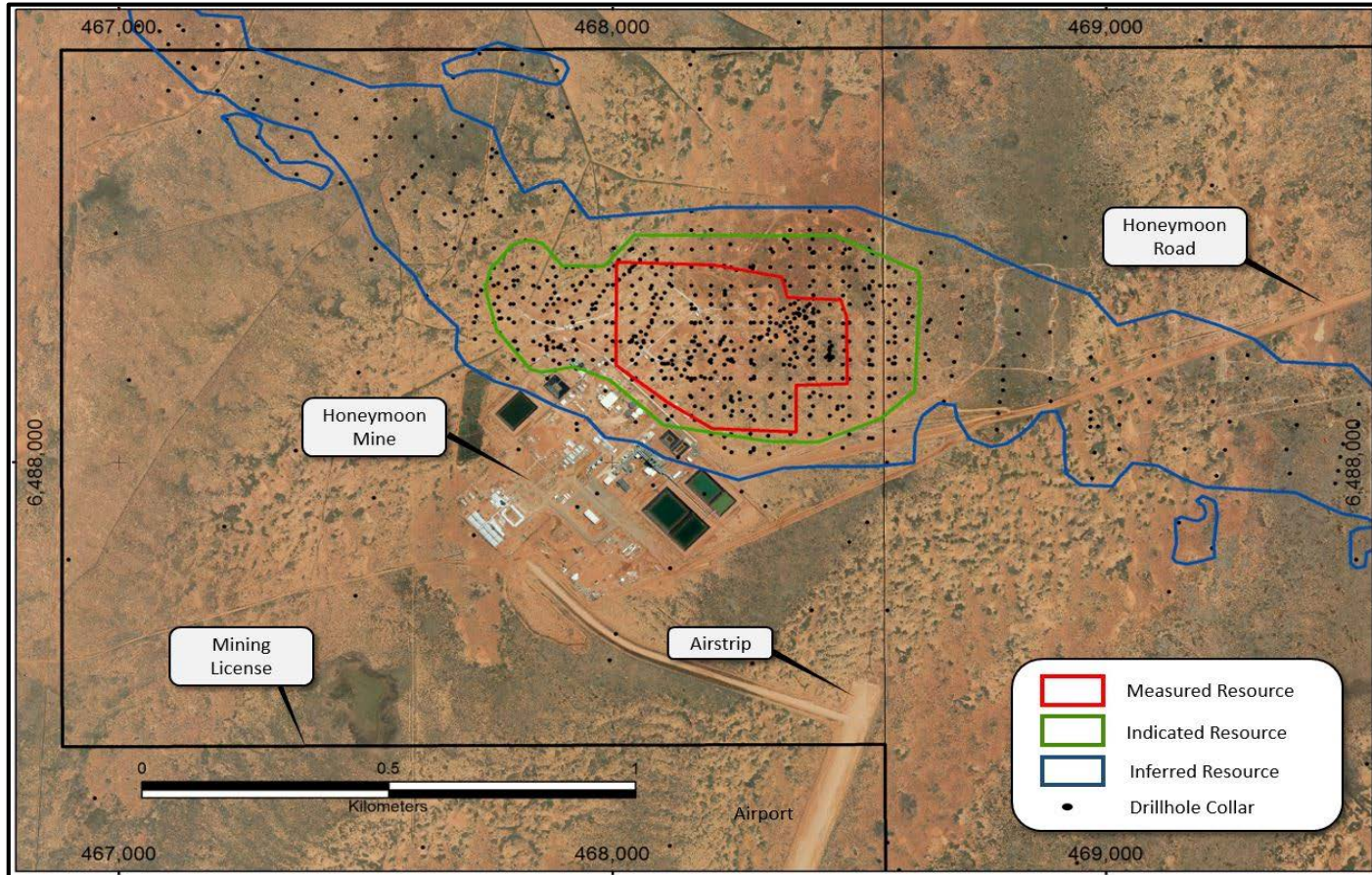
# HONEYMOON RESOURCE

## SIGNIFICANT EXPANSION POTENTIAL



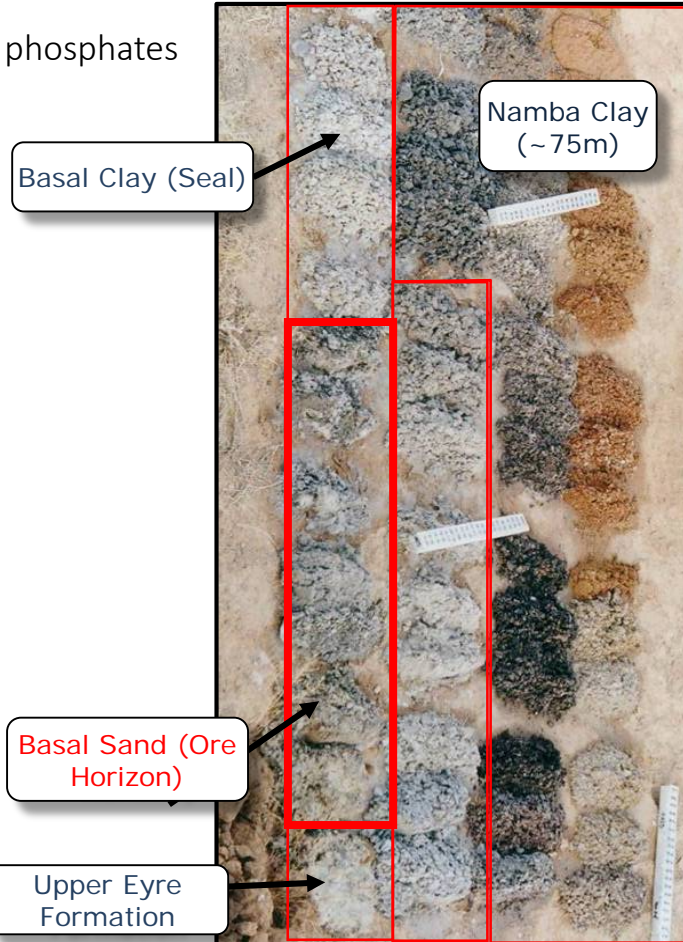
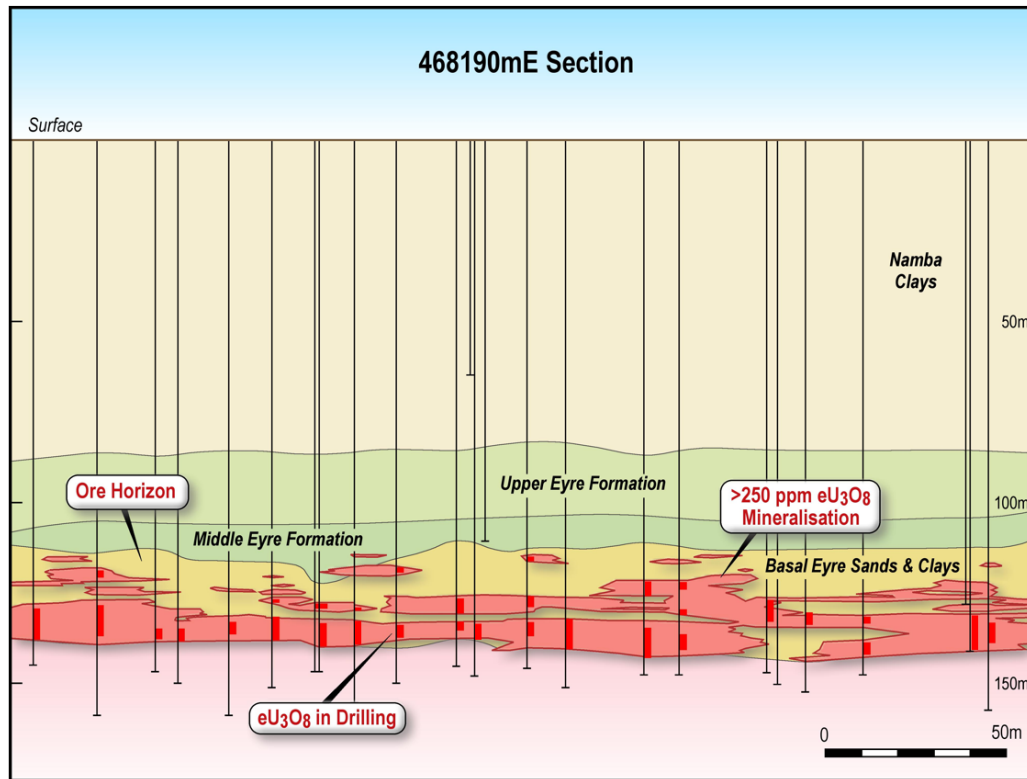


# RESOURCE LOCATION



# TYPICAL HONEYMOON SECTION

- Mineralisation within permeable Basal Eyre sands and gravels
- Uranium mineralogy of acid-soluble uraninite, coffinite, and uranium phosphates
- Mineralisation 115-125m below surface





# HONEYMOON MINERALISATION



Basal Clay (Seal)  
HML137C – 87.4m  
(0% U3O8)



Redox Interface  
HML137C – 109.70m  
(~0.1% U3O8)



Oxidised Sands  
HML137C – 102.30m  
0% U3O8



Basal Sand  
Reduced Gravel  
HML137C – 114.80m  
(~0.6% U3O8)



Coarse Organics (Wood)  
HML109C – 107m (~8.0% U3O8)



Basal Sand  
Reduced Gravel  
HML137C – 114.80m  
(~0.6% U3O8)



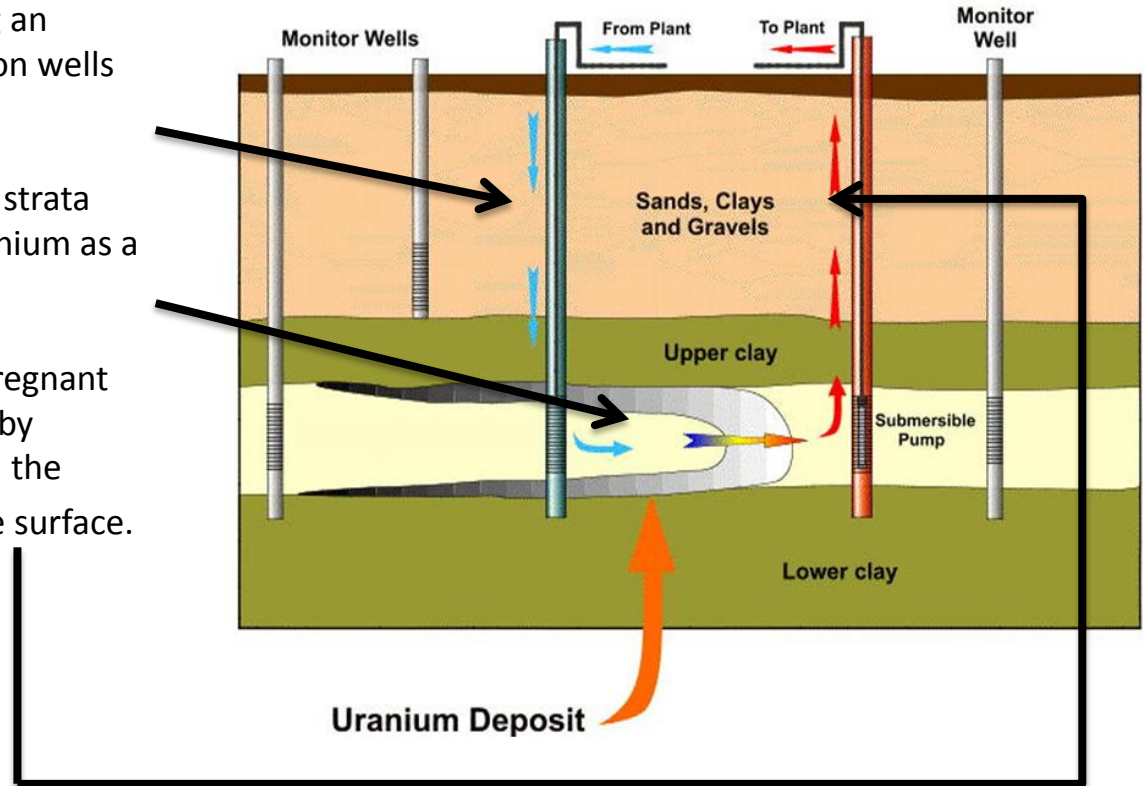
# ISL PROCESS

## Process Flow

An acidic leach solution containing an oxidant is pumped through injection wells into uranium-bearing solution.

The solution migrates through the strata sands oxidising and mobilising uranium as a soluble complex.

The solution, now referred to as pregnant leach solution (PLS) is intercepted by production wells, located between the injection wells, and pumped to the surface.



# INFRASTRUCTURE

*Production Bore*



*Processing Facility*



*Water treatment plant*



*Control Room*



*Settling Ponds*



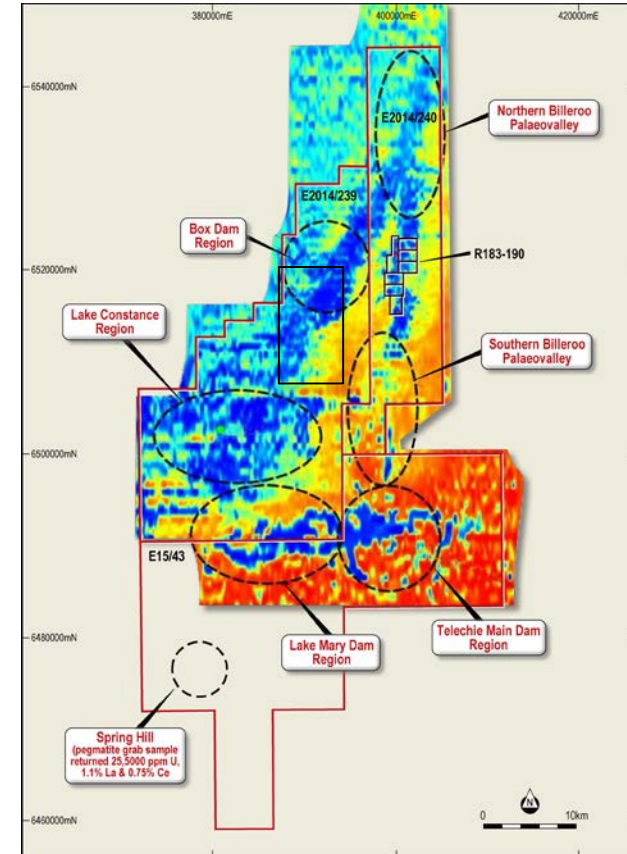
*Camp*



# WESTERN TENEMENTS

## EXPLORATION POTENTIAL

- 54 km potentially mineralised strike
- Exploration target of 21-53Mt at between 480 and 1400ppm  $U_3O_8$  for between 24 and 53MLB of  $U_3O_8^2$
- Previously defined grade estimates in the Retention Leases
  - Validation and resource estimation underway
  - Some 300 drillholes drilled in recent years to be incorporated for the first time
- Goulds Dam / Billeroo system underrated:
  - 12 km strike length
  - Under drilled
  - Highly prospective ground
- EL5043 has pegmatite hosted mineralisation up to 3.5%  $U_3O_8$  (grab sample)
- Broader Exploration licence under application
  - Potential for new paleochannels
  - Along trend of mineralised fluids
  - Massively under explored
  - Grades of up to 1%  $eU_3O_8$  reported from historical drilling (1960 – EAR19)



# MILESTONES

## ✓ Project Acquisition

- Lowest cost per lb acquisition in recent history

## ✓ Resource Upgraded

- Increased Honymoon resource 66% to 27mlb U3O8

## Further Resource Calculations underway

- Convert exploration target into JORC resources
  - Goulds Dam Target
  - Jasons Target

## Commence exploration Q2 2016

- Target known mineralised areas for low cost additional resource

## Option Study

- Commence a process option study SX, IX, Eluex – March 2016
- Expansion options depending on resource size





# MARKET

## WHY URANIUM?

### Strong growth in demand

- 434 operating energy facilities require 78ktpa of  $U_3O_8$
- 71 energy facilities under construction
- 167 energy facilities planned
- 300+ energy facilities proposed
- 2 energy facilities re-started in Japan with an additional 21 energy facilities applying for re-starting
- Sept 2014 “Cooperation in the peaceful uses of nuclear energy” signed with India
- New reactors being announced monthly

### Significant challenges towards establishment of further supply

- Delays in bringing further substantial projects into production: environmental, financing , permitting
- No expansion of existing operations
- Secondary supplies under Russia-US HEU program ceased end of 2013 (24Mlb/pa)



Source: [www.sdu.sk](http://www.sdu.sk)

# MARKET DEMAND

## GLOBAL REACTOR GROWTH & URANIUM DEMAND

- Global nuclear generation capacity will increase 70% over the next decade from 374,067MWe to 636,693MWe
- 71 reactors under construction & 173 new reactors planned
- Annual uranium demand will increase from 177mlbs to 280mlbs by 2020, representing a 58% increase
- Additional 390mlbs will be needed for new initial cores

### **71** UNDER CONSTRUCTION

- **Generation Capacity:** 74,886 MWe
- **Annual Uranium Demand:** 13,000 tonnes U

### **434** OPERABLE REACTORS DECEMBER 2013

- **Generation Capacity:** 374,067 MWe
- **Annual Uranium Demand:** 64,978 tonnes U

### **173** PLANNED REACTORS

- **Generation Capacity:** 187,740 MWe
- **Annual Uranium Demand:** 32,600 tonnes U

# MARKET

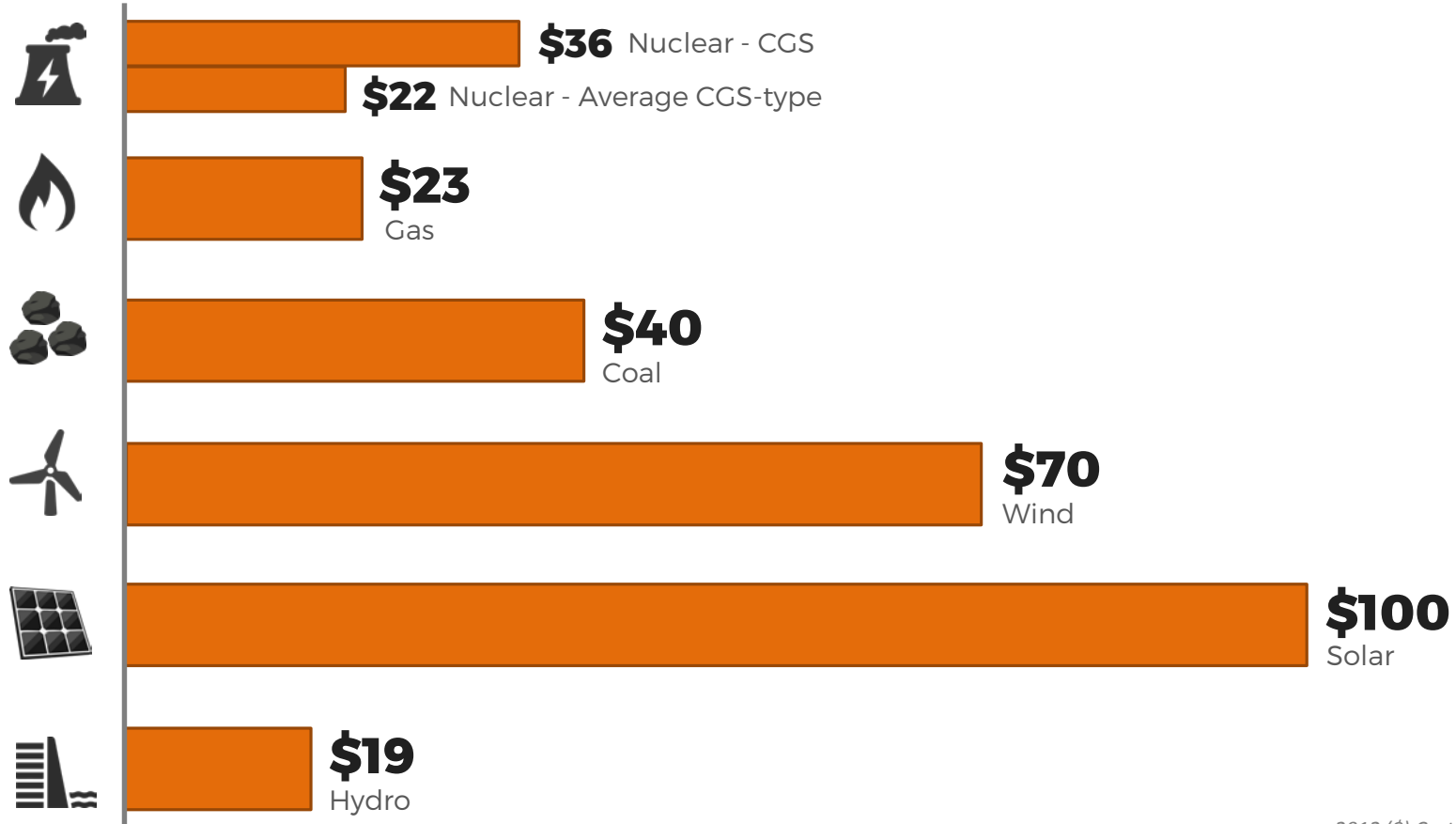
## NUCLEAR POWER – THE BEST SOLUTION

- Nuclear power provides the best solution for a non-polluting 24:7 base load power source
- Zero Carbon Emissions
- Over 430 existing nuclear plants, focused in Europe, North America, Russia, South Korea and Japan
- 1.7 billion of the world's population is still without electricity
- Emerging economies will need to implement a combination of nuclear, coal, gas and renewables to meet their growing power requirements
- Nuclear power needs to be made readily accessible and affordable to the emerging economies to ensure that non-polluting sources are chosen in the hunt for more power



# MARKET

USA ELECTRICITY PRODUCTION COSTS, 2012, Dollars per MWhr





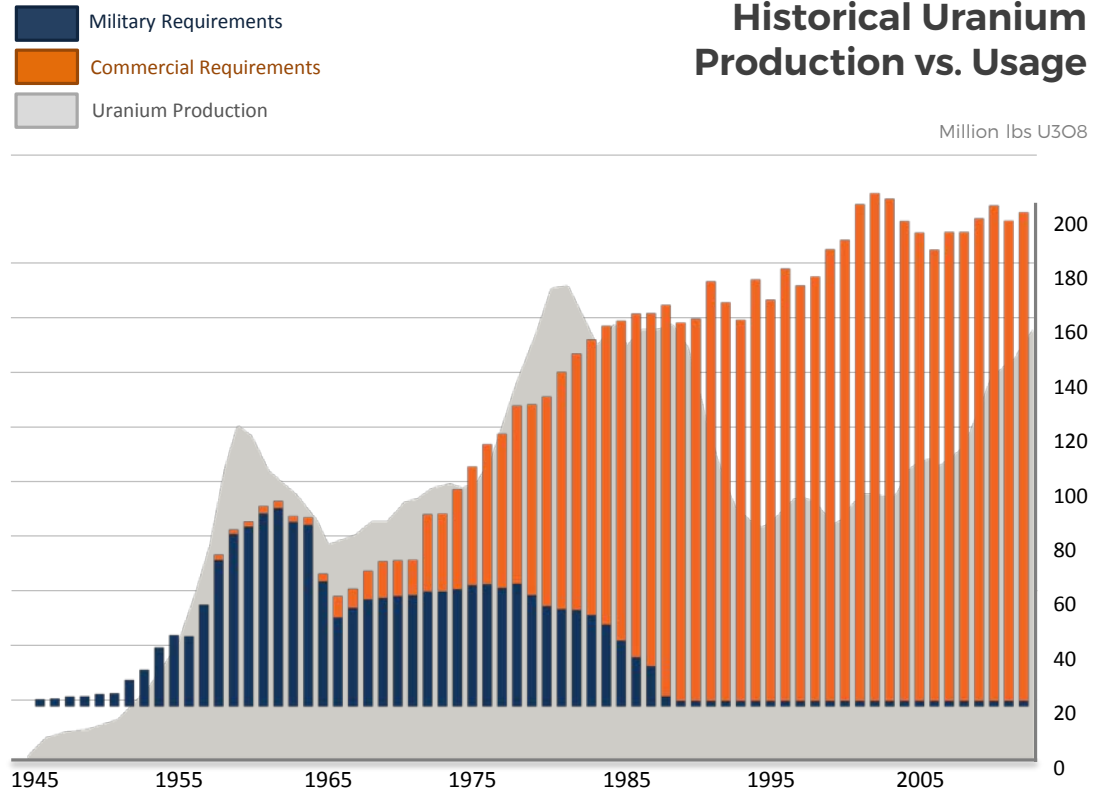
# MARKET

## URANIUM SUPPLY & DEMAND

- Uranium consumption has exceeded production for many years but recycled supplies have left the market in oversupply – sources of recycled materials are now almost exhausted

### Key sources of recycled materials nearly exhausted:

- Down blended weapons grade material - Russian HEU agreement ends in 2013 - Removes 24mlbs of secondary supply
- Re-enriched or stripped tails - both Russia and USA have largely exhausted usable tails stockpiles
- Excess government & utility inventory - Inventories from US Dept. of Energy, which will continue for 3-5 years at most, have been acquired by TRAXYS

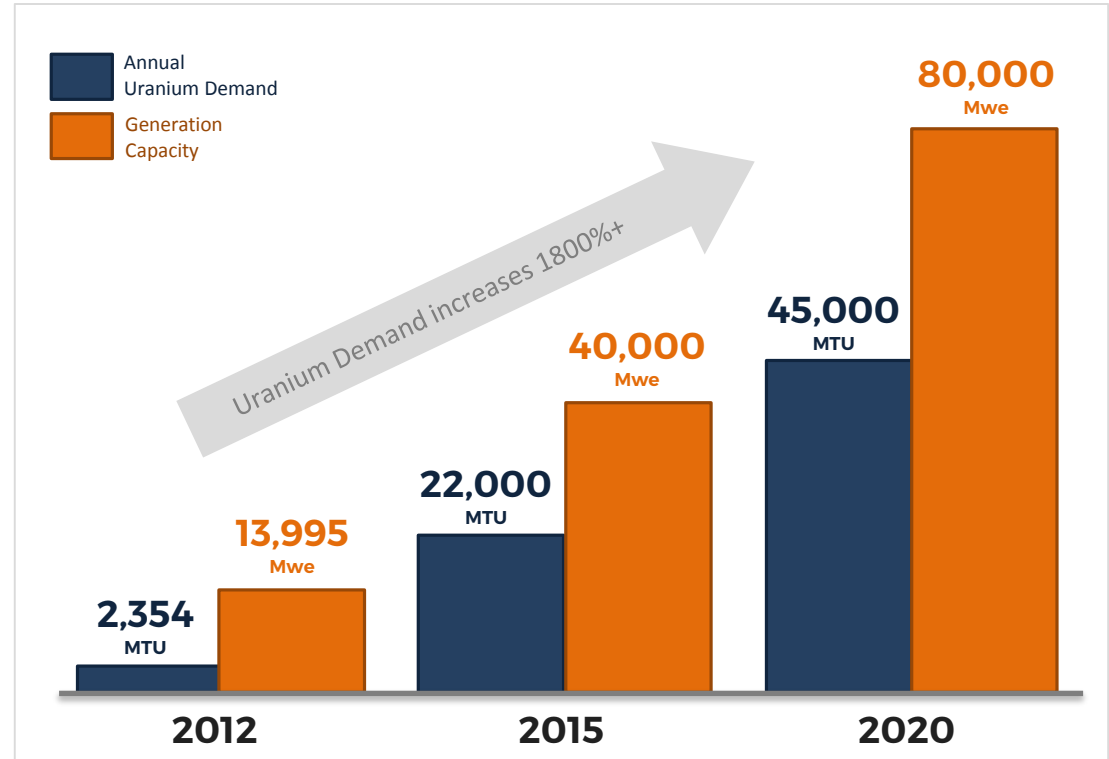


Source: tradetech.com

# MARKET

## CHINESE NUCLEAR GENERATION 2012 - 2020

- Between 2010 and 2013, China purchased ~\$15B of U3O8
- China's demand for U3O8 is forecast to increase over 19 times by 2020



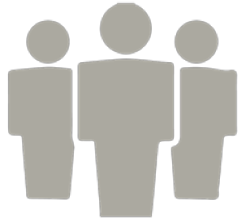
China imported 18,968 tU in 2013.

According to the Chinese General Administration of Customs, China imported 18,968 tU (~49.3 million pounds  $U_3O_8$ ) in 2013. The country reportedly imported uranium from five countries: Kazakhstan, Uzbekistan, Australia, Namibia, and Canada. China paid US\$2.4 billion for its uranium imports in 2013, (US\$48.68 per pound  $U_3O_8$ ).

Graph Source: World Nuclear Association; China Guangdong Nuclear Power Corporation; China National Nuclear Corporation

# COMPETITIVE ADVANTAGE

BOSS RESOURCES



## TEAM

Executives with project management, development, financing, and operation experience



## ASSETS

Honeymoon Uranium asset in South Australia  
Underestimated uranium province  
100mlb  $U_3O_8$  target



## APPROVAL

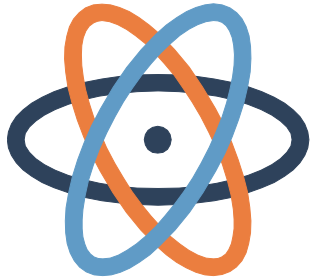
All approvals are in place



## LICENCED

Only developed project in Australia which is fully licensed and able to be brought into production





# **BOSS**

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