



Countdown to Production

Australia's next uranium producer

Diggers & Dealers 2023

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The information in this document relating to the Enhanced Feasibility Study ("EFS") is extracted from the announcement entitled 'Updated Feasibility Study identifies lower costs and increased financial returns' dated 21st June 2021. Boss Energy confirms that all the material assumptions underpinning the production targets, and forecast financial information derived from the production targets, continue to apply and have not materially changed.

As the EFS utilises a portion of Inferred Mineral Resources, the ASX Listing Rules require a cautionary statement to be included in this presentation. The EFS is based on a Mineral Resources Estimate in accordance with JORC guidelines 2012 (ASX: 149% Increase in Measured and Indicated Resources at Honeymoon date 25 February 2019). The Company advises that the EFS uses a portion of Inferred Resources; in the first 3 years (less than 1%), in the first 5 years (5%) and over the 11-year life of mine (19%). The Company confirms that the use of Inferred Resources is not a determining factor to the Honeymoon Project's economic viability. There is a low level of geological confidence associated with Inferred Resources and there is no certainty that further exploration or evaluation work will result in the determination of Indicated Resources or that the production targets reported in this announcement will be realised.

REFERENCE TO PREVIOUS ASX ANNOUNCEMENTS

The mineral resource estimate and exploration target in this announcement were reported by the Company in accordance with listing rule 5.8 and 5.7 (respectively) on 25 February 2019 and 25 March 2019, respectively. The Company confirms it is not aware of any new information or data that materially affects the information included in the previous announcement and that all material assumptions and technical parameters underpinning the estimates in the previous announcement continue to apply and have not materially changed.

In relation to the exploration target, this does not include areas of the existing mineral resource and the potential quantity and grade reported are conceptual only in nature. Insufficient exploration has been conducted to estimate a mineral resource and it is uncertain whether future exploration will lead to the estimation of a mineral resource in the defined areas.

EFFECT OF ROUNDING

A number of figures, amounts, percentages, estimates, calculations of value and fractions in this Presentation are subject to the effect of rounding. Accordingly, the actual calculation of these figures may differ from the figures set out in this Presentation.

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First NIMCIX elution column entering Honeymoon uranium mine site

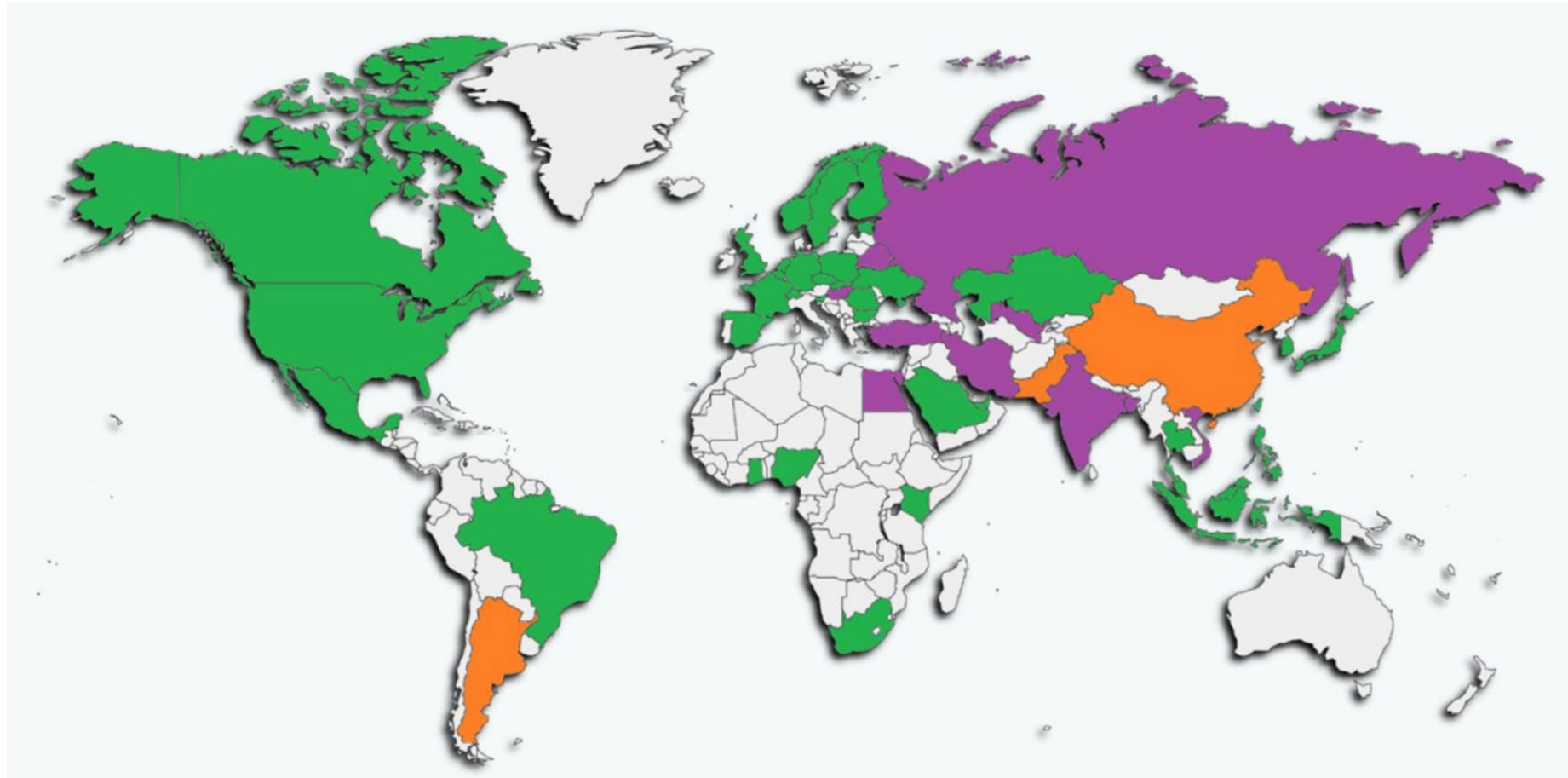
Security of supply is under threat as for the first time since the 1970's there is very little inventory and new production is needed in the near term. China and Russia taking significant positions in Kazakhstan, deliveries from Kazakhstan vulnerable

Vulnerable Open vs Captured Fuel Markets

Green = Open Market
65% of world

Purple = Russia Captured
15% of world

Orange = China Captured
20% of world



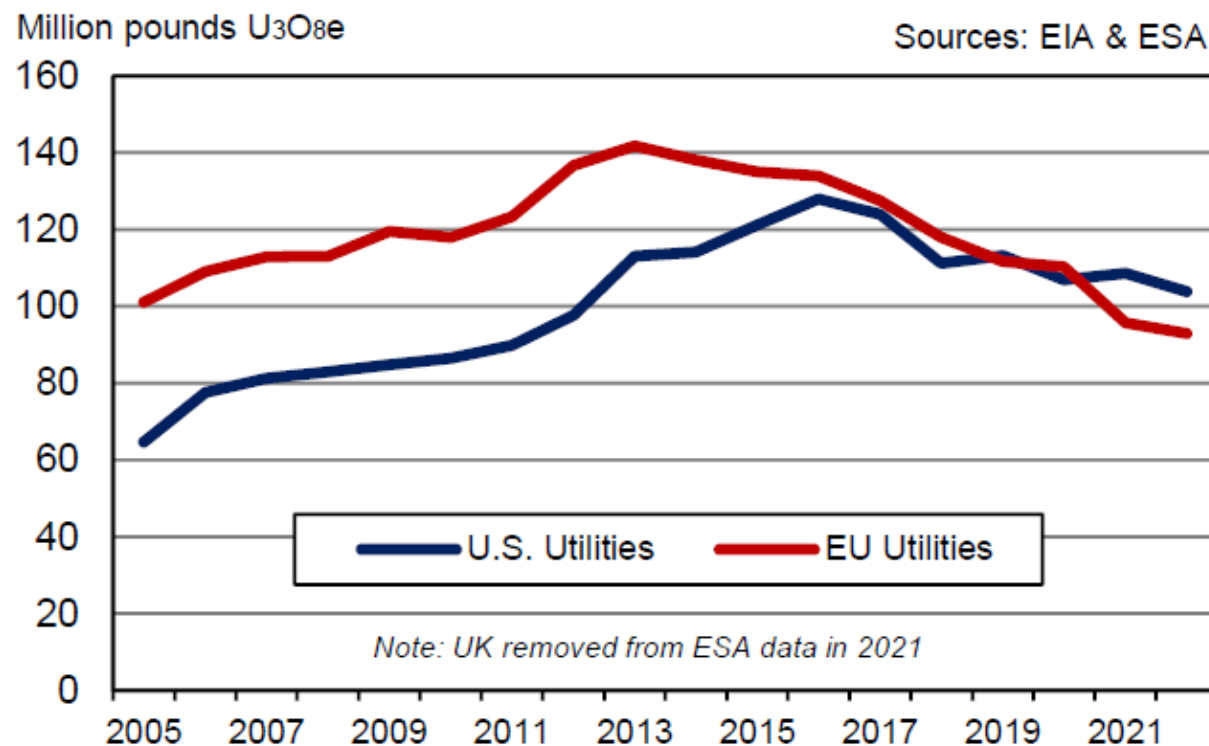
Inventory supplies are needed to fill the gap

Inventory supplies at all-time low



- Without the buffer of low-cost inventory and secondary supplies, demand will be needed from new production from existing mines, restarts and new mines
- US inventories are back to 2012 levels and represent about 28 months forward cover
- The EU inventories have dropped significantly, around 36 months of forward cover
- These are average figures; some utilities in the EU and US hold far lower levels than others
- Post 2016/17 European and US utilities have been cumulatively burning more fuel than they have been purchasing.
- This has resulted in inventory drawdown.

U.S. & EU Utility Inventories, 2005-2022

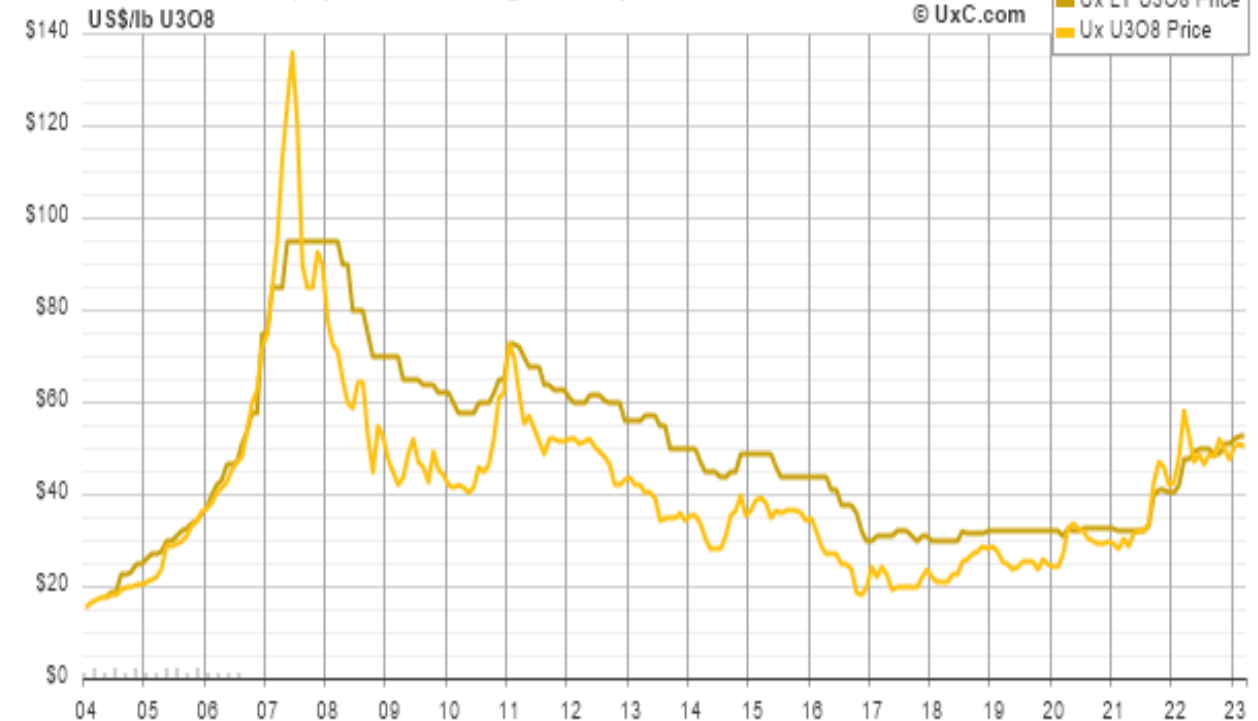


Since 2020 the uranium market has risen 94% in Spot Prices and 50% in Term Prices

Spot and Term prices

- From Sept '21 to April '22 spot price consistently higher than term price, resulting in utilities moving into the term market
- **Activity in term market has increased significantly**, term volumes of already 118m lbs U3O8 compared to 124m lbs U3O8 in whole of 2022
- **Likely to see further pressure on spot and term prices**
- **Net increase in primary uranium demand of 33-44Mlbs U3O8 by 2030:**
 - Russian imports to drop by 10-12 million lbs U₃O₈
 - Higher tails assays increase demand by 8-12Mlbs U₃O₈
 - Less western underfeeding leads to a drop of 15-20Mlbs U₃O₈
- **Term contracting is increasing as utilities secure supply, RFP's for longer durations up to 10 years, larger volumes...**
- We have a significant advantage over other new projects, Boss is poised to capitalize on the immediate and future demand and price overshoot.

Ux U3O8 Price® (Spot vs. Long-Term)





Investment Highlights

On track for production in Q4 2023

Fuelling a sustainable future

- **Fully funded, with A\$87M cash, zero debt, plus A\$105M strategic inventory,** to become Australia's next Uranium producer, with a global first mover advantage
- **Technically proven, low-cost re-start operation** in the uranium friendly jurisdiction of South Australia
- **Well positioned to take advantage of the current rising uranium market,** compelling market fundamentals
- **Fast track production to produce 2.45Mlbs U3O8 p.a. within 3 years**
- **Best in class development and operational team,** with proven track record of delivering results
- **Low operating cost of LOM** average AISC of US\$25.6/lb and Cash Costs of US\$18.50/lb
- **Significant upside beyond initial mine plan,** with ~50% of resource yet to be incorporated
- **Fully permitted** with all Native Title and Environmental Agreements in place, 3.3Mlb U3O8 p.a. Export Permit
- **Well positioned to build a strong multi-asset platform**

Board of Directors

Highly credentialed with proven track record in Uranium



Wyatt Buck

Non-Executive Chairman

Ex-Cameco 1991 - 2006
GM of McArthur River & Key
Lake Mill

Ex-Paladin 2006-2011
Executive GM of Operations

Ex-First Quantum 2011-2021
Global Operations Director



Duncan Craib

Managing Director & CEO

Ex-Kalahari Minerals/ Extract
Resources 2008-2012
CFO & Coy Sec

Ex-China General Nuclear/ Swakop
Uranium 2012-2016
Finance Director

MCA Uranium Forum Chair
2021 until present



Jan Honeyman

Non-Executive Director

Ex-First Quantum 2006 – 2022
Director of Human Resources

Ex-KBR Energy, Global Director,
Talent Management



Bryn Jones

Non-Executive Director

Ex-Heathgate Resources,
General Atomics 10 years

Ex-Laramide Resources
COO 2015 - 2019

ASX 300 Boss Energy has liquid assets of \$195M

Strong Balance Sheet and Zero Debt

Share Price Performance



Key Metrics

	Shares (M)	Value (A\$M)
Ordinary Shares	353*	
Market Capitalisation (A\$2.92/sh**)		1,003
Physical Uranium		108
Cash (30 June 2023)		87
Enterprise Value		808

* Excludes ~1.8m options with various exercise prices

**As at 4 August 2023

1.25Mlb Strategic Physical Inventory provides offtake flexibility, strengthens balance sheet (~US\$38M book profit) and provides marketing advantages.

Previous produced and sold U308 globally

Honeymoon Restart Uranium Mine Site

Water Treatment Plant

Production Well Fields

Drying Circuit

Ion Exchange

Personal use only



Restart development progress

Honeymoon on Time & on Budget

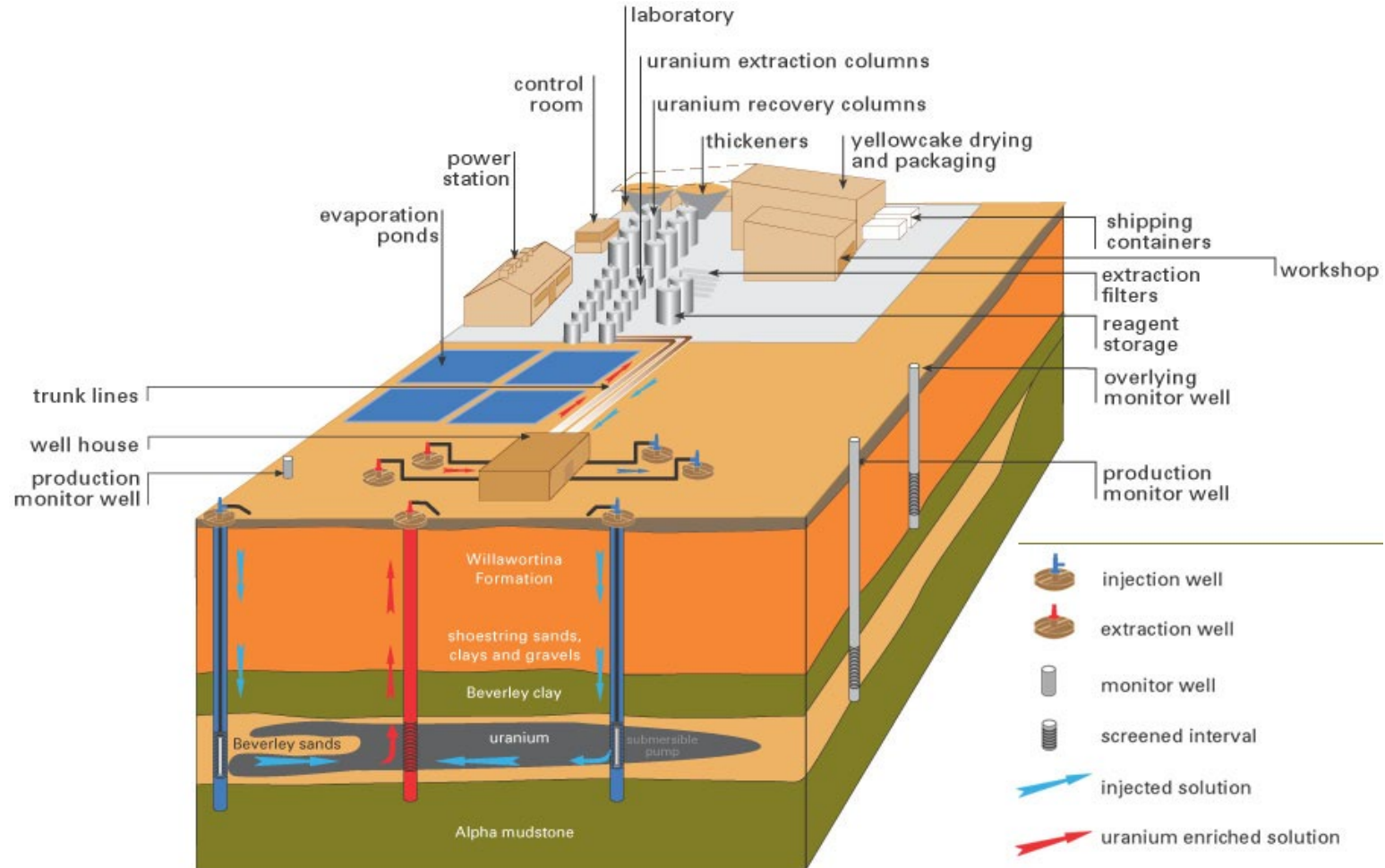
Strong progress for Q4 2023 production

- **All major long-lead tenders have been issued** and are under evaluation / execution
- **Orders for key critical equipment items have been placed**
- **170 procurement packages have been awarded** ~ \$83M / 79% of CAPEX forecast of \$105M (excluding \$8M contingency)
- **Startup wellfield installation** is complete, flushing will commence soon
- **Gypsum Pond completed**, Water Treatment plants are nearing completion
- **Ion Exchange columns being delivered**, old pulse columns removed
- **Electrical MCC, Substations and transformers** have all been awarded
- **Adelaide office opened**, site accommodation and administration block refurbished
- **Senior management and employees recruited**, workforce on site continues to grow, currently 75 employees in total

ISR is a proven cost effective and environmentally encouraged extraction process

In-Situ Recovery (ISR) Mining

- **ISR accounts for ~ 60% global uranium mined, used in Australia, Kazakhstan, USA**
- ESG friendly mining method
- Unlike conventional mining, temporary ground disturbance, no ground excavations.
- Barren leach liquor is injected through the uranium hosted ore body, to recover high grade pregnant liquor solution by production wells and pumped to the surface.
- Uranium is then extracted using ion exchange, precipitated out and dried to produce U₃O₈.



Wellfield construction electrical, instrumentation, and piping materials on site has been installed



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Gypsum pond completed



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Boss Owned 400T crane removing redundant Solvent Extraction pulse columns



RO and Water Treatment Plant

~ 71.6Mlb U3O8

JORC Resources

- 71.6Mlb U3O8 JORC Resource¹ at an average grade of 620ppm U3O8
- The Honeymoon Re-start Area (HRA) contains 36Mlb U3O8
- ML 6109 sits on top of the HRA
- Shallow mineralisation at 90 - 120m depth
- A further 36Mlbs sits outside the HRA on 2 satellite domains
- In addition to the JORC Resource, Honeymoon has a substantial Exploration Target² of 58Mlbs to 190Mlbs at grades up to 1,080ppm U3O8

¹ Refer ASX announcement 25 February 2019

² Refer ASX announcement 25 March 2019. The potential quantity and grade of the Exploration Target is conceptual in nature. There has been insufficient exploration to estimate a Mineral Resource and it is uncertain whether future exploration will result in the definition of a Mineral Resource

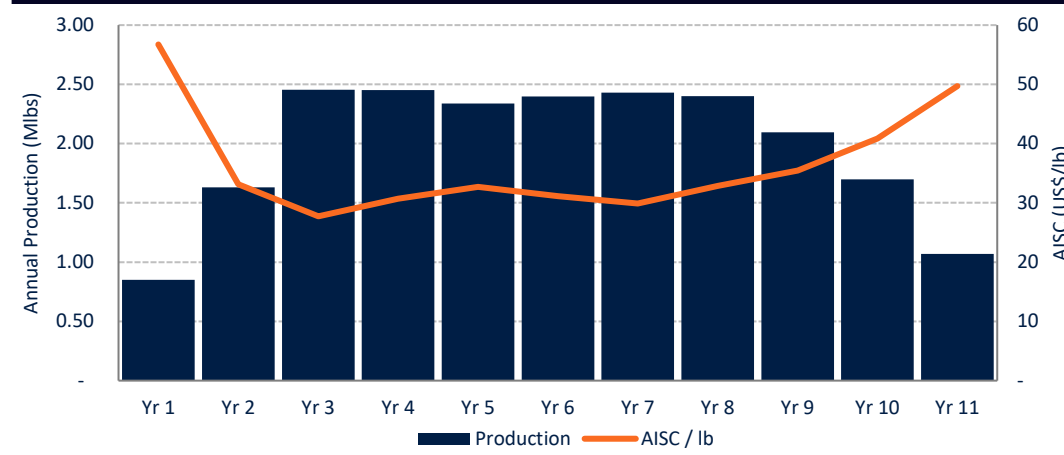


Honeymoon's low cost of production delivers robust financial returns (table excludes 1.25Mlbs held physical uranium)

Financial Highlights

US\$1.28B REVENUE	US\$25.62/lb AISC
62% EBITDA Margin	Low US\$80M Capital Cost

PRODUCTION SUMMARY



KEY STUDY OUTCOMES		2021 EFS
Physical Summary		
Life of Mine	Years	11
U ₃ O ₈ Production	Mlb	21.81
Financial Summary		
IRR _{Ungeared, Pre-tax}	%	47.1%
Revenue	US\$M	1,279
Free Cash Flow (Pre-tax)	US\$M	580
EBITDA Margin	%	62%
Operating Costs		
Cash Cost	US\$/lb U ₃ O ₈	18.5
All In Sustaining Cost	US\$/lb U ₃ O ₈	25.6
All In Cost	US\$/lb U ₃ O ₈	31.9
Capital Costs		
Re-start	US\$M	60.2
Additional IX Columns	US\$M	19.8
Total	US\$M	80.0



Substantial scope to add significant value and mine life beyond initial EFS mine plan

Significant Upside Potential



Value based on Feasibility Study



Value of existing strategic inventory



Mine life extensions from existing resource & exploration success



Leverage to Uranium price upside



Potential to increase production rate and/or optimise costs



Highly attractive to ESG funds - cleanest mining technique

Lower cost of capital

Not to scale and illustrative only



Boss Energy's ESG Focus

Instilling ESG values not only creates economic value, but long-term value for society by addressing its needs and challenges

- **Business Ethics & Corporate Governance**
- **Climate change & decarbonisation**
- **Health, safety and well-being**
- **Community & landholder relationships**
- **Environmental protection & contamination**
- **Radiation Protection**

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Honeymoon Restart Project

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