



Becoming a multi-mine Uranium producer

Positioned to benefit from a rising Uranium market

Macquarie Australia Conference
~ May 2024

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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.



Boss has delivered two producing mine and market capital growth of \$2B and zero debt

BOSS Strategic Horizons ~ it's all about timing

Vision and Strategy

- Become Australia's Next Uranium Producer
- 10 year mine life +
- **2.5Mlb U₃O₈ per annum production**
- 100Mlb exploration target
- Superior Total Shareholder Return, campaign style, lean
- **Proven Board & Management**
- Solid relationships with key stakeholders, government, industry, investors, employees, traditional owners

Foundation and Development

- Skilled, committed, stable wellfield, processing and exploration geology team
- **Self performing** Project and Construction team, engineering, procurement, construction and management.
- Successful feasibility studies and Field Leach Trials
- **Successful capital raises, over 7 yrs \$420M raised to deliver \$2B market cap growth, two producing mines, zero debt and \$300M in liquid assets**
- Purchased 1.25Mlb U₃O₈ for working capital, competitive market terms
- **Honeymoon is now producing U₃O₈**

Organic Growth

- **Not all Pounds are Created Equal !!**
- Full pipeline of near-mine and regional exploration targets
- **Over 6,000 km² of prospective tenements in South Australia**
- **Honeymoon 72Mlbs U₃O₈ JORC Resource ~ Mining license, export permit, producing and first sales in Q3 2024**
- New mining license preparation underway:
 - Goulds Dam 25Mlbs U₃O₈
 - Jasons 11Mlbs U₃O₈
- 4 new tenements awarded on Kinloch ~120kms south of Honeymoon
- 3 new tenements on Eyre Peninsula
- Base Metal JV with 1st Quantum and Coda

Mergers & Acquisitions

- **Discipline First – value accretive M&A with Alta Mesa**
- Tier 1 jurisdiction focus, Australia, North America and Canada
- Focus on economic resources which can produce
- **ASX 200 and strong institutional support for Boss Energy strategy**
- Recognised global producer, a partner of choice for consolidation
- Consolidation makes sense
- **BOSS IS OPEN FOR BUSINESS**



On time and on budget to be a multi-mine ISR producer in Two tier One locations in 1st Half 2024

Global Uranium Platform in Tier 1 Locations

HONEYMOON (100% ownership): 2.45Mlbs U₃O₈ p.a.

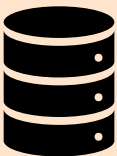
ALTA MESA (30% ownership): 1.5Mlbs U₃O₈ p.a.

South Australia



Uranium friendly

First drum produced



Produced in April 2024 with cashflow in Q3 CY24

Texas



Uranium friendly

First drum expected



Expected in 1H 2024

IX process proven



Key metrics already exceeding Feasibility Study forecasts

Ramp up per schedule



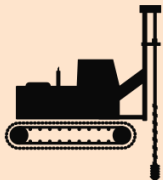
Ramp up to 2.45Mlb/annum proceeding to plan

Proven management team



Team commenced production at Rosita ISR restart plant

Exceptional drilling results



Significantly exceed the cutoff grade required for ISR



Partnership combines experience in development, commissioning and operating mining projects globally

Leading Development and Operating Experience

BOSS ENERGY

Wyatt Buck (Chair)

- GM of McArthur River Uranium Mine
- GM Key Lake Mill, the largest uranium mining operation in the world.
- Executive GM for all of First Quantum's global assets

Duncan Craib (CEO and MD)

- Finance Director for construction and commissioning of Husab uranium mine in Namibia.
- CFO for Kalahari Minerals plc and its 43% interest in Extract Resources Ltd.
- MCA Uranium Forum Chair since 2021

Jan Honeyman (NED)

- First Quantum Director of Human Resources (across all operations)
- KBR Energy, Global Director, Talent Management

Bryn Jones (NED)

- COO Laramide, (New Mexico and Queensland assets uranium assets)
- Manager technical services Heathgate Resources
- Worley-SNC Lavelin JV Uranium Lead for the Olympic Dam Expansion Project

Sashi Davies (Sales and Strategic Advisor)

- Vice Chair World Nuclear Fuel Market
- Previously General Manager of CGN Global Uranium Ltd
- Previously Head of Marketing for Extract Resources (Husab mine in Namibia)

ENCORE ENERGY

Bill Sheriff (Founder and Exec Chair) –

- Founder and Chair of Energy Metals Corp
- Responsible for compiling largest domestic uranium resource base in US history prior to acquisition by Uranium One Corp

Dennis Stover (Director & Chief Technical Officer)

- Leading expert in ISR recovery focussed on US production
- Independent ISR consultant for Honeymoon
- Previous CEO enCore
- Executive Vice President, Americas for Uranium One, Inc overseeing development of Uranium One's assets in the US

Paul Goranson (Director & CEO)

- COO of Energy Fuels - Alta Mesa and Nichols Ranch
- President, COO and Director Uranerz - Nichols Ranch ISR Uranium Project
- President, Cameco Resources
- Vice President of Mestefia Uranium LLC
- Previous President of the Uranium Producers of America

Susan Hoxie-Key (Director)

- Chairwoman of the World Nuclear Fuel Market
- Lead Nuclear Engineer Southern Nuclear Operating Company

Peter Luthiger (COO)

- Managed the Alta Mesa ISR project during its period of production

○ Mine development and / or operating involvement by respective teams



In-Situ Recovery Mining and Ion Exchange

In-Situ Recovery (ISR)

- ✓ **Most common method of uranium recovery globally**
ISR accounts for ~ 60% global uranium mined, used in Australia, Kazakhstan, and USA
- ✓ **ESG friendly**
Minimal surface disturbance i.e. no blasting or yellow fleet, no tailings, groundwater quality maintained
- ✓ **Low cost**
Circa. two thirds the cost of conventional mining and average CAPEX less than 15% of conventional mines
- ✓ **High tenors being recorded on Honeymoon**
Wellfield tenors are averaging 80 - 100 mg/litre, compared to study estimates of 47mg/ litre.

Ion Exchange (IX)

- ✓ **Proven technology**
IX technology has been proven over past 8 decades and is utilised by the most established uranium mines globally including Inkai (Kazatomprom, Cameco), Olympic Dam (BHP), Langer Heinrich (Paladin) and Husab (CGN)
- ✓ **Proven resin bead performance**
Resin performance is the actual loading of uranium from the PLS onto the ion exchange resin. Demonstrated loading rates of up to 36g/l are 33% higher than study estimates.
- ✓ **100% stripping of uranium**
Stripping of uranium from loaded resin is at 100%, demonstrating Honeymoon is working properly, resulting in high grade concentrated eluate of up to 6,000 ppm.

4 Key Uranium Industry Considerations

1

Supply is tight

Supply to 2030 is tight across the cycle, and if Russia cuts supply to the US in response to US sanctions on Russian supply this would put immediate upward pressure on price

2

Kazakh supply limited

Supply from Kazakhstan will be more limited to the west as Russia and China take more supply from this area and until sulphuric acid shortages are resolved

3

Rising long term price

Spot pricing reflects discretionary buying while the **rising term price is an indicator of increasing concern about the supply deficit.**

4

New markets for nuclear

Demand for reliable clean energy is creating **new markets for nuclear generation as a source of supply for data centres.** Data centre electricity usage, according to new IEA report, to increase from 460 terawatt-hours (TWh) worldwide in 2022 to 1,000 TWh in 2026. **This is approximate to the electricity consumption of Japan.**



Uranium prices have yet to peak and likely to overshoot in near term due to lack of new production

Spot and Term prices

Boss has entered into **two binding sales agreement to sell ~1.8 Mlbs U3O8** in total to two major Western utilities in the period to 2032.

Reasons for net increase in primary uranium demand:

- Intermediaries and funds/financials buying
- Growth in data centre demand for clean base load energy
- Reactor life extensions and new reactor plans
- Global inventories lowest in past decade
- Geopolitical uncertainty;
 - US ban on Russian nuclear fuel imports passed by Senate
 - No sign of an end to the Russian invasion of the Ukraine

Boss has a significant advantage over development projects, poised to capitalize on the immediate and future demand and price overshoot.

Security of supply, together with the Alta Mesa JV **Boss has increased its near-term sales capacity in a market which continues to strengthen.**

To incentivise new production, **development projects need to see sustainable term prices in excess of \$85lb U3O8**

Ux U3O8 Price - 2 Year History (Weekly)

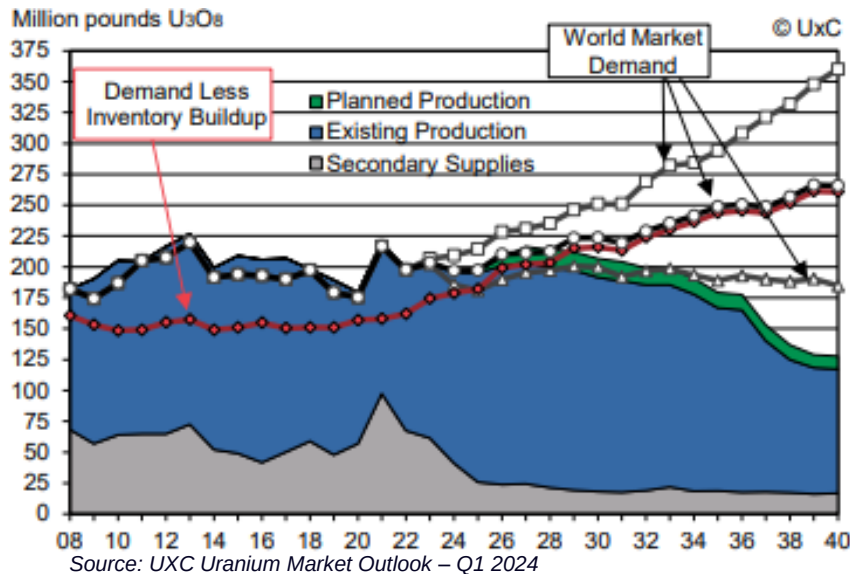


UxC U₃O₈ Price – 2 Year History (Weekly)

The supply deficit is forecast to grow as reserves for existing mines are exhausted and insufficient production planned to replace it

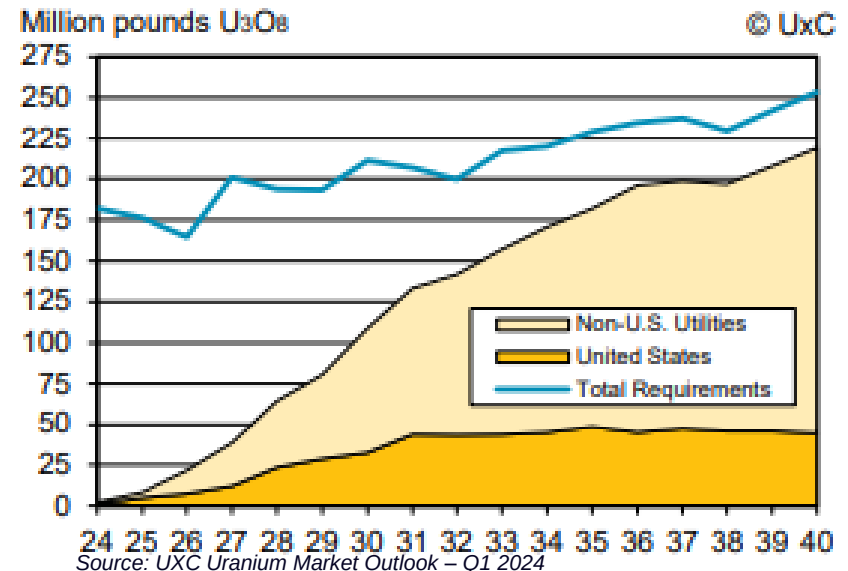
Global uranium supply & demand ~ structural deficit

Base Case Uranium Supply / Demand (UXC)



- Supply is tight across the cycle with significant deficits forecast over the long term
- Material risks to planned production
- Secondary supplies are almost fully drawn down

Uncovered Requirements (UXC)



- Significant (2.1 billion lbs through 2040) uncovered demand forecast (60% uncovered)
- Cameco 1st Qtr 2024 address notes pricing is the highest it has seen at this stage in the contracting cycle.

Uranium prices have never been this high at the start of a contracting cycle

Contracting activity and strategy

Boss has entered into two binding sales agreement to sell 1.8Mlbs U_3O_8 to major European / US power utilities over 8yrs from 2024 to 2032

Boss has ~\$300m in liquid assets and no debt¹

Boss has 1.25Mlbs of strategic U_3O_8 ¹ inventory and diversity of supply with no jurisdiction risk



Alta Mesa Central Processing Plant, Texas, USA



Honeymoon Processing Plant and Wellfields, South Australia

Flexibility

- Strategically remain under-contracted so early in the contracting cycle
- Strong Balance Sheet has provided Boss flexibility to enter into contracts when it wants to

Strong relationships

- Entered into two binding sales agreements
- In constant discussions with major global utilities
- Boss seen as strong counterparty given strategic inventory and diversity of supply with no jurisdiction risk

Significant upside

- First production timed with strong market fundamentals
- Additional contracts will be layered into a rising market
- Boss upside remains significant as term prices continue to rise

Notes

1. As at 31 March 2024

Asset Portfolio Highlights

Boss' post transaction asset portfolio

Honeymoon Project

Ownership	%	100
Location		South Australia
Total resource		71.6Mlb at 0.062% U ₃ O ₈
Production commencement		1Q 2024
Initial plant capacity	Mlbpa	2.45
AISC	US\$/lb	25.6

Alta Mesa Project

Ownership	%	30
Location		South Texas
Total resource (100%) ¹		20Mlb at 0.12% U ₃ O ₈
Production commencement		1H 2024
Initial plant capacity (100%) ²	Mlbpa	1.5

Notes

- Please refer to the cautionary statement and accompanying resource table in Slide 10 for further information.
- ISR typically takes 2-5 years to ramp to full plant capacity

Resource tables

Honeymoon	Tonnes (Mt)	Grade (%U ₃ O ₈)	Contained U ₃ O ₈ (Mlbs)
Measured	3.1	0.110	7.6
Indicated	18.4	0.063	25.5
Inferred	30.9	0.057	38.5
Total	52.4	0.062	71.6

Alta Mesa	Resource Category	Tonnes ('000)	Grade (%U ₃ O ₈)	Contained U ₃ O ₈ ('000 lbs)
Within existing wellfields	Measured	54	0.152	164
Alta Mesa	Indicated	1,397	0.106	2,959
Mestena Grande	Indicated	119	0.120	287
Total M&I Mineral Resources		1,570	0.109	3,410
Alta Mesa	Inferred	1,263	0.126	3,192
Mestena Grande	Inferred	5,733	0.119	13,601
Total Inferred Mineral Resource		6,996	0.120	16,793
Total		8,566	0.11	20,203



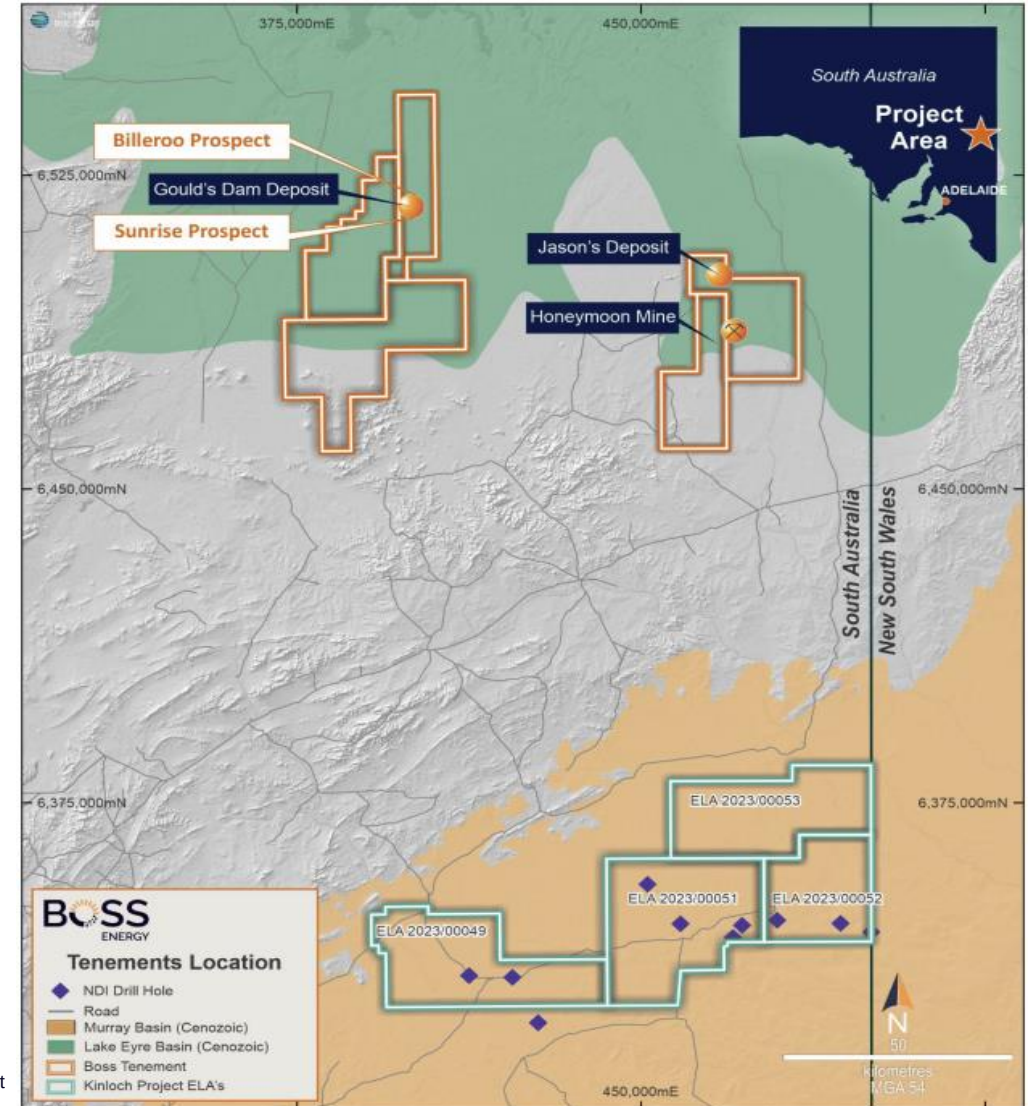
Substantial Exploration Target of 58Mlbs to 190Mlbs at grades up to 1,080ppm U_3O_8 ¹

Honeymoon Exploration Potential

- Following strong infill drilling results at Gould's Dam, Jasons, Billeroo and Sunset. Boss is now preparing for technical and economic studies on developing the satellite deposit as an additional production source, ~36Mlb U_3O_8 indicated and inferred resource
- In addition to the JORC Resource of 71.6Mlb, Honeymoon has a substantial Exploration Target¹ of 58Mlbs to 190Mlbs at grades up to 1,080ppm U_3O_8
- Boss awarded Kinloch Project exploration tenements ~130km south of Honeymoon. Also recently awarded three highly prospective exploration tenements on the Eyre Peninsula in South Australia
- Boss now has a total uranium exploration tenement package of over 6,000 km² in South Australia
- Boss' exploration strategy has already been highly successful, increasing the JORC Resource at Honeymoon from 16.57Mlbs to 71.67Mlbs (~4.3x) since project acquisition in December 2015

Notes:

1. 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. Please refer to the cautionary statement and accompanying resource table in Slide 4 for further information.





Keep in touch

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