



An international multi-mine Uranium producer

Positioned to benefit from a rising Uranium market

Resources Rising Stars Gold Coast Conference
4 September 2024

ASX: BOE | OTCQX: BQSSF

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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 21 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 dated 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 rules 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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Past performance information, including past share price performance of Boss Energy and pro forma financial information, given in this Presentation is given for illustrative purposes only and should not be relied upon as (and is not) an indication of Boss Energy's (or anyone else's) views on Boss Energy's future financial performance or condition. Past performance of Boss Energy cannot be relied upon as an indicator of (and provides no guidance as to) the future performance of Boss Energy. Nothing contained in this Presentation nor any information made available to you is, or shall be relied upon as a promise, representation, warranty or guarantee, whether as to the past, present or future.

JORC CODE

It is a requirement of the Listing Rules that the reporting of ore reserves and mineral resources in Australia comply with the Joint Ore Reserves Committee's Australasian Code for Reporting of Mineral Resources and Ore Reserves ("JORC Code"). Investors outside Australia should note that while ore reserve and mineral resource estimates of the Company in this Presentation comply with the JORC Code (such JORC Code-compliant ore reserves and mineral resources being "Ore Reserves" and "Mineral Resources" respectively), they may not comply with the relevant guidelines in other countries and, in particular, do not comply with (i) National Instrument 43-101 (Standards of Disclosure for Mineral Projects) of the Canadian Securities Administrators (the "Canadian NI 43-101 Standards"); or (ii) Item 1300 of Regulation S-K, which governs disclosures of mineral reserves in registration statements filed with the SEC. Information contained in this document describing mineral deposits may not be comparable to similar information made public by companies subject to the reporting and disclosure requirements of Canadian or US securities laws.

This ASX announcement was approved and authorised by the CEO on behalf of the Board of Boss Energy.

Honeymoon and Alta Mesa Resource Tables

HONEYMOON JORC EXPLORATION TARGETS AND MINERAL RESOURCE

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	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 NI 43-101 MINERAL RESOURCE ESTIMATE (2023)

For the purposes of Listing Rule 5.12, Boss Energy cautions that the mineral resources for the Alta Mesa Project are not reported in accordance with the JORC Code. The mineral resource estimate at Alta Mesa is a foreign estimate prepared in accordance with Canadian National Instrument 43-101. A competent person has not done sufficient work to classify the foreign estimate as a mineral resource in accordance with the JORC Code, and it is uncertain whether further evaluation and exploration will result in an estimate reportable under the JORC Code. Please refer to Annexure A for additional technical information relating to the foreign estimate.

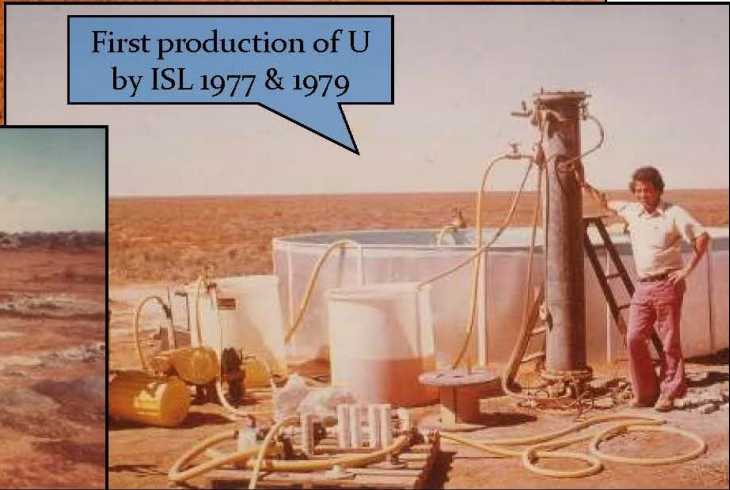
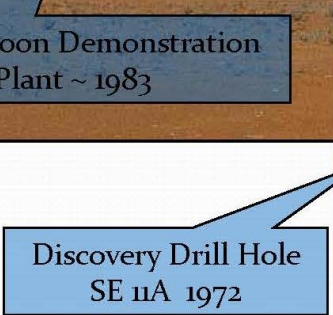
The information in this Presentation and in Annexure A provided under Listing Rules 5.12.2 to 5.12.7 that relates to the foreign estimate for the Alta Mesa Project is based on information compiled by Mr Jason Cherry, and is an accurate representation of the available data and studies for the Alta Mesa Project.

Mr Cherry is a member of the Australian Institute of Geoscientists (AIG) and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration, and to the activity being undertaken to qualify as a Competent Person, as defined in the JORC 2012 edition of the “Australasian Code for Reporting of Mineral Resources and Ore Reserves”. Mr Cherry has 17 years’ experience and is a full-time employee as Geology Manager for Boss Energy Ltd. Mr Cherry consents to the inclusion in this Presentation of the matters based on this information in the form and context in which they appear.

	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
Mesteña Grande	Indicated	119	0.120	287
Total Measured & Indicated Mineral Resources		1,570	0.109	3,410
Alta Mesa	Inferred	1,263	0.126	3,192
Mesteña Grande	Inferred	5,733	0.119	13,601
Total Inferred Mineral Resource		6,996	0.120	16,793¹

Building mines takes time....Honeymoon took half a century from discovery to being a commercially viable mine...

Honeymoon Uranium Mine History





It's all about timing.

Strategic Horizons

Boss has delivered two producing mines and has a market capital growth of \$1.3B and zero debt

Vision & Strategy

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

Foundation & Development

- **Proven Board & Management**
- Skilled, committed, stable wellfield, processing and exploration geology team
- **Proven chemistry** - Successful feasibility studies and Field Leach Trials
- Strategic inventory of 1.25Mlb U₃O₈ for working capital, competitive market terms
- **Self performing** Project and Construction team, engineering, procurement, construction and management

Organic Growth

- Full pipeline of near-mine and regional exploration targets in South Australia
- **Honeymoon 72Mlbs U₃O₈ JORC Resource**
~ Mining license, export permit, producing and first sales in April 2024
- Highly successful exploration strategy, increasing JORC Resource from 16.57Mlbs to 71.67Mlbs (~4.3x)
- **Over 6,000 km² of prospective tenements in South Australia**
- Base Metal Joint Ventures

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
- **BOSS IS OPEN FOR BUSINESS**



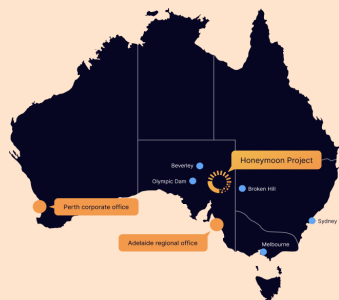
An International multi-mine ISR producer in Two tier One locations

Global Uranium Platform in Tier 1 Locations

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

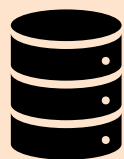
ALTA MESA (30% ownership): 1.5Mlbs U₃O₈ p.a.

South Australia



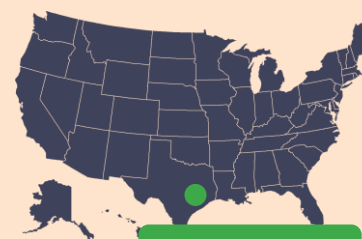
Uranium friendly

First drum produced



Produced in April 2024 with first cashflow in Q3 CY24

Texas



Uranium friendly

First drum expected



Q3 2024

IX process proven



Key metrics already exceeding Feasibility Study forecasts

Ramp up per schedule



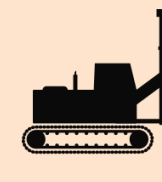
Ramp up to 2.45Mlb/annum proceeding to plan

Proven management team



Team commenced production at Rosita ISR restart plant

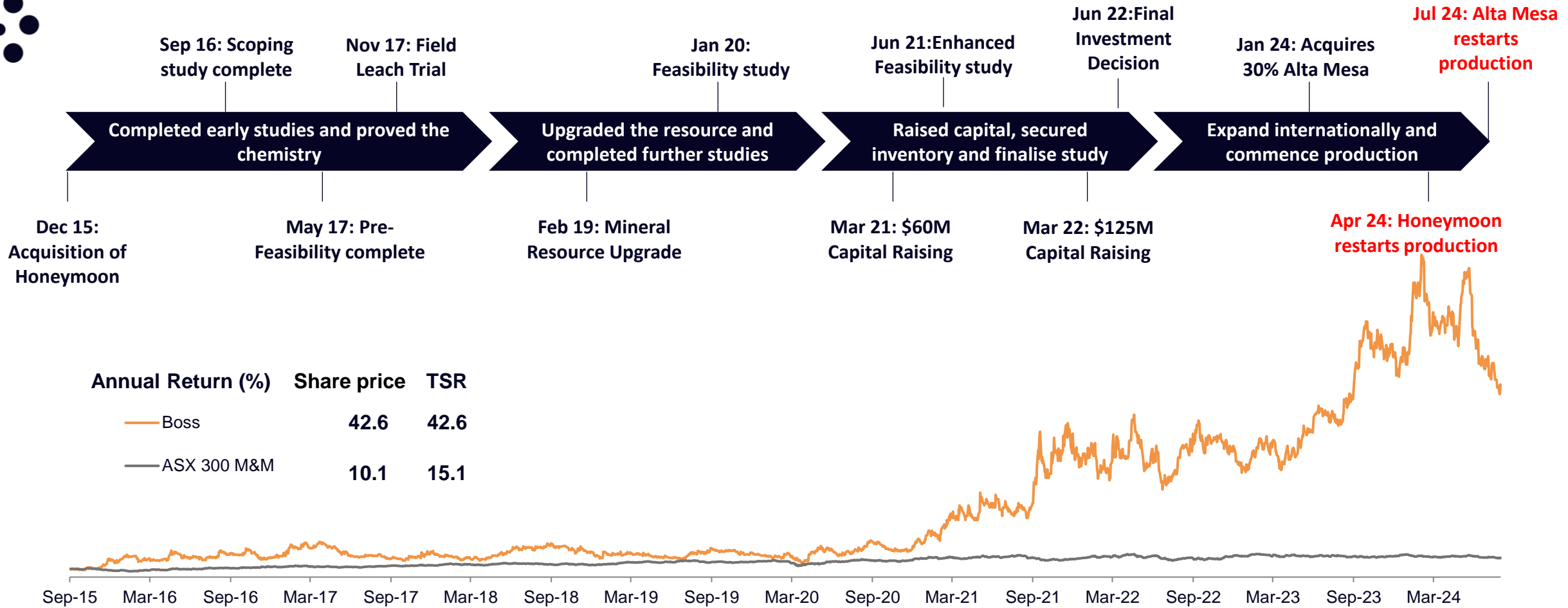
Exceptional drilling results



Significantly exceed the cutoff grade required for ISR

A disciplined approach to raising capital. Out of \$443 million raised, \$274 million remains in cash and liquid assets¹

Shareholder returns



Note: (1) As at 30 June 2024
 (2) Chart shows share price performance indexed to 1 on 1 September 2015
 Source: Bloomberg

Previous produced and sold U₃O₈ globally

Honeymoon Restart Uranium Mine Site

Water Treatment Plant

Production Well Fields

Drying Circuit

Ion Exchange





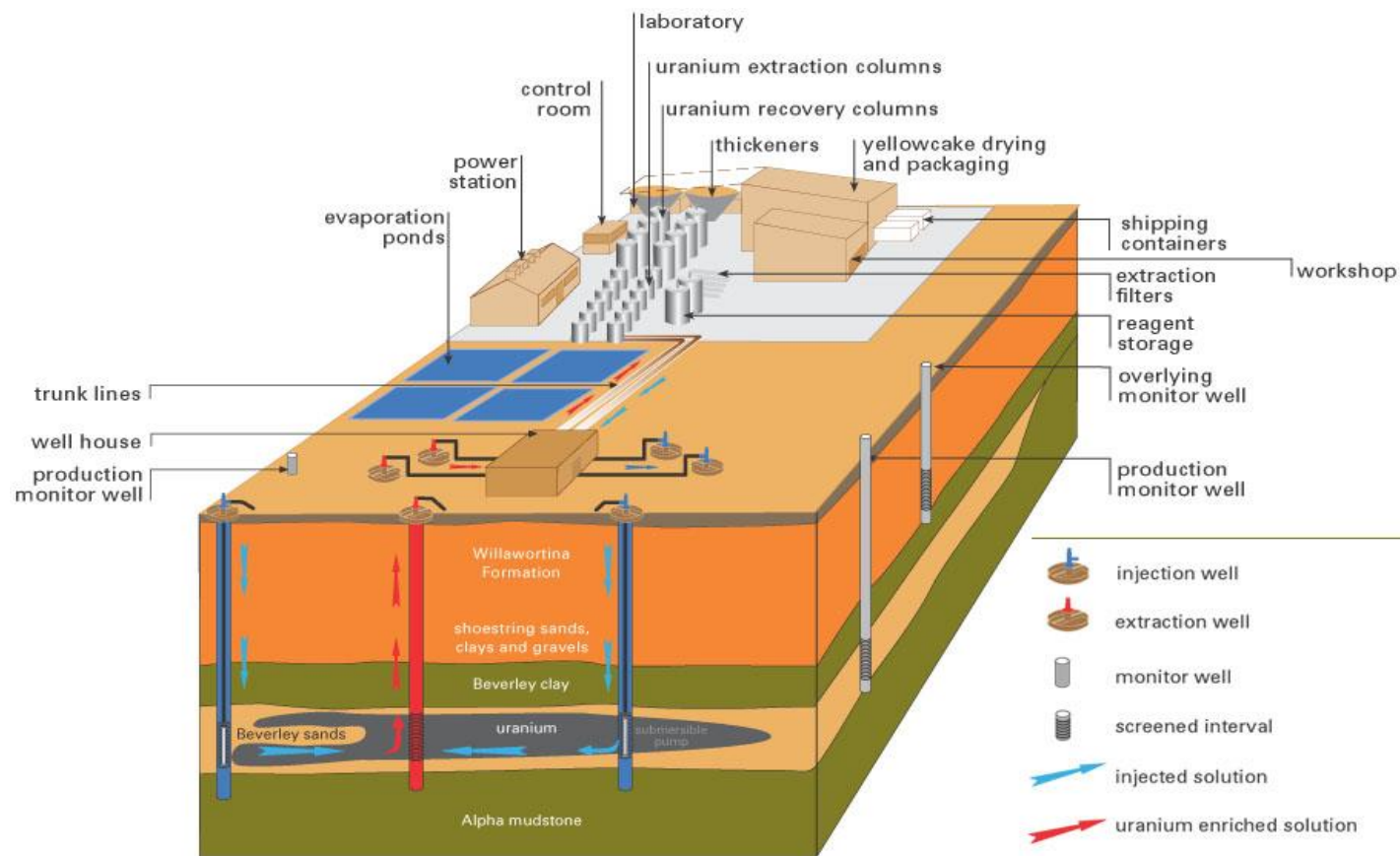
RO and Water Treatment Plant



ISR is a proven cost-effective uranium extraction process with reduced environmental impact relative to traditional mining

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, not tailings, minimal dust and less water consumption
- 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 U_3O_8 .
- ~ 2/3 the cost of conventional mining and average CAPEX less than 15% of conventional mines



Source: United States Nuclear Regulatory Commissions (www.nrc.gov) (1) World Nuclear Association – World Mining Uranium Production (December 2020) (2) TradeTech – The Nuclear Review (October 2016)

Example Schematic (Source: Beverley Environmental Impact Statement (1998))

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



Barren Leach Solution / Pregnant Leach Solution Ponds





Boss owned 400T crane removing redundant Solvent Extraction pulse columns



First NIMCIX elution column entering Honeymoon uranium mine site

First IX Column Lift





Completion of Columns:
#2 by September 2024
#3 by December 2024
#4-6 2025

Each NIMCIX column proportionately contributes to the production ramp up
Specific ramp up profile and production rates set out in the published Feasibility Studies



Ramp-up running ahead of Feasibility Study schedule, with 57,364lbs of U_3O_8 produced by June 30, 2024;
A further 72,516lbs of U_3O_8 was produced in the combined months of July and August 2024.
NIMCIX columns 2 is being commissioned and 3 almost constructed, paving way for ongoing production increases

Boss has now sold uranium and received revenue \$



Figure 1: Drummed uranium ready for first shipment



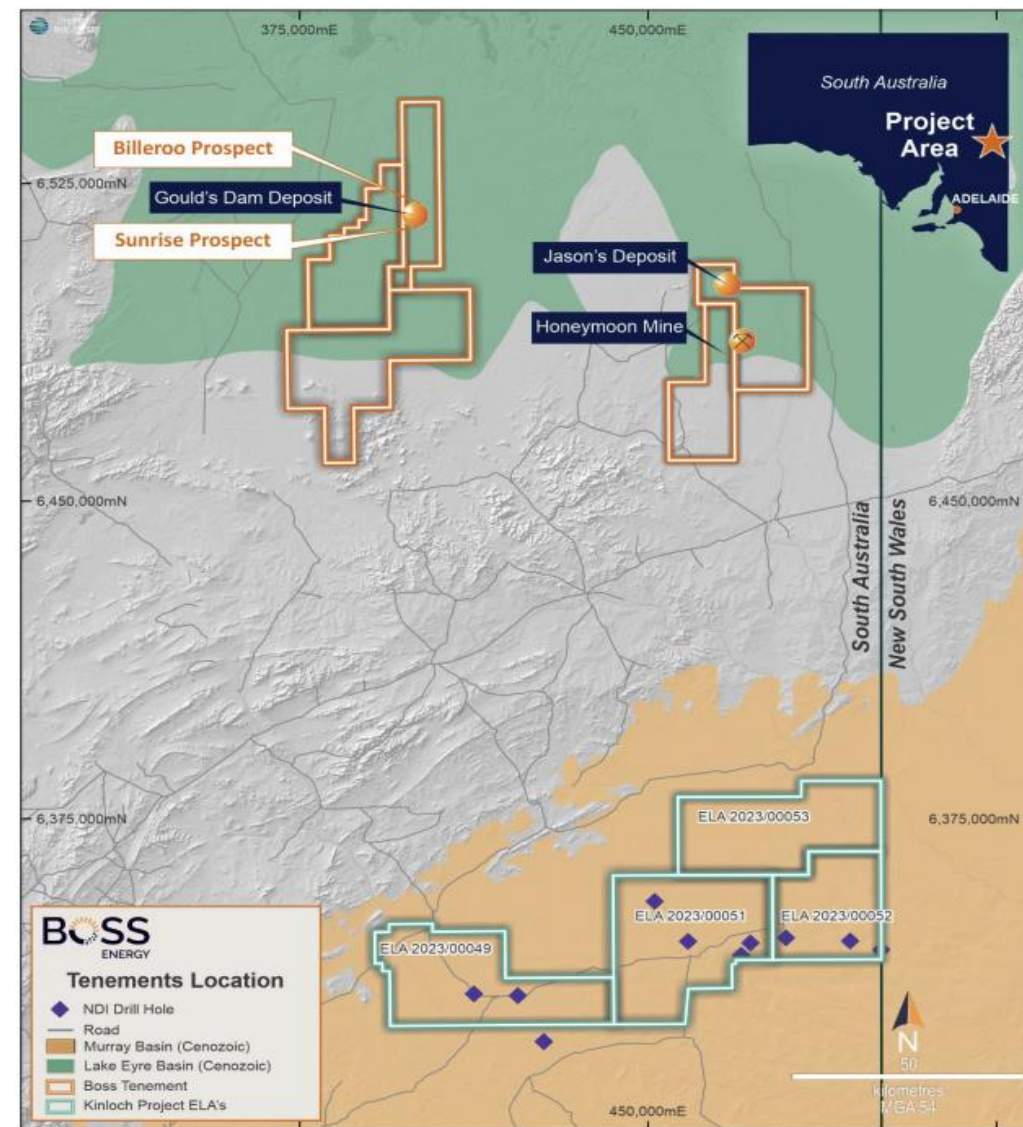
Mining Licence of 36Mlb with a further defined 36Mlbs to be licenced
Substantial Exploration Target of 58Mlbs to 190Mlbs at grades up to 1,080ppm U_3O_8 ¹

Honeymoon Exploration Potential

- 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
- Following strong infill drilling results Boss is undertaking technical and economic studies on developing the satellite deposits as an additional production source, ~36Mlb U_3O_8 indicated and inferred resource
- 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
- Joint Venture with First Quantum TSX: FM for earn-in arrangement for discovery of copper
- 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.





High grade 1,200ppm ISR project in a Tier 1 jurisdiction with significant potential for growth
 Large ~200,000 acres of underexplored land package in a prolific uranium region

Alta Mesa ISR Uranium project

- Located in South Texas – a prolific US district for sandstone-hosted ISR production with historic production of ~80Mlb¹
- Most progressive permitting production jurisdiction in the US
- Historically has produced the third largest amount of uranium out of all ISR assets in the US, producing 4.6Mlb between 2005 and 2013 through ISR mining with an alkaline lixiviant¹
- Existing 20Mlb total high-grade resource of 1,200 ppm²
- 1.5Mlb plant capacity with a simple path to expand capacity using existing licences and drying capacity of 2Mlb

ALTA MESA HISTORICAL PRODUCTION REFERENCE POINTS

Production reference points ³	
Average production between 2005 and 2013	0.58Mlb
Maximum yearly production between 2005 and 2013	1.07Mlb
Licensed processing capacity	1.5Mlb

Notes:

1. enCore Energy November 2023 Corporate Presentation
2. Please refer to the cautionary statement and accompanying resource table in Slide 4 for further information.
3. Technical Report Summary for the Alta Mesa Uranium Project, Brooks and Jim Hogg Counties, Texas, USA National Instrument 43-101, Technical Report 2023, BRS Engineering, using mid-point

ALTA MESA PROCESSING FACILITY



ALTA MESA NI 43-101 MINERAL RESOURCE ESTIMATE (2023)

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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)

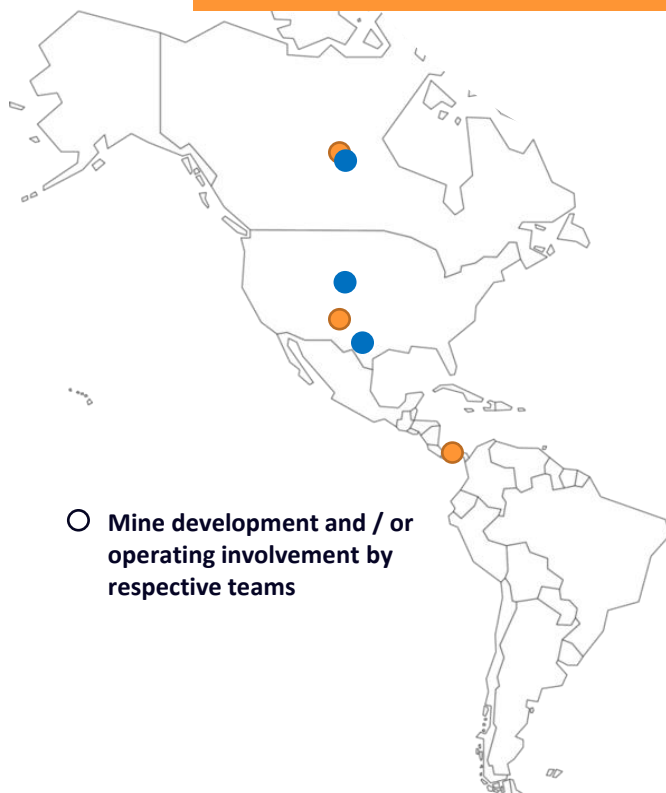
- COO of Energy Fuels - Alta Mesa and Nichols Ranch
- President, COO and Director Uranerz - Nichols Ranch ISR Uranium Project
- President, Cameco Resources
- Vice President of Mestefia Uranium LLC
- Previous President of the Uranium Producers of America

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





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 U₃O₈ to major European / US power utilities over 8yrs from 2024 to 2032

Boss has ~\$274m in liquid assets and no debt ¹

Boss has 1.25Mlbs of strategic U₃O₈¹ 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 30 June 2024

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 this would put immediate upward pressure on price. Cost curves going up and development of new mines being pushed out.

2

Kazakh supply limited

Supply from Kazakhstan will be more limited to the west as Russia and China take more supply from this area, logistical issues, and tax changes making material more expensive to mine.

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

Demand is increasing

Demand for reliable clean energy is creating **new markets for nuclear generation as a source of supply for data centres, doubling to 1,000 TWh by 2026.** **Revival of shut down reactors and life extensions to existing reactors**, let alone the new builds occurring throughout the globe.



Keep in touch

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