ASX: ORP

CORPORATE PRESENTATION

UNLOCKING TOMORROW'S ENERGY TODAY

SEPTEMBER 2026

orpheusuranium.com

ORPHEUS URANIUM LTD

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Past performance

Past performance is not indicative of future performance, and no guarantee of future returns is implied or given.

Financial data

All references to dollars ($) and cents are to Australian currency, unless otherwise stated.

Market and industry data

This Presentation contains third party data relating to the industries, segments and markets in which the Company operates or aims to operate (Industry Data). This information has been prepared using publicly available data. The Industry Data includes third party market data, estimates and projections. There is no assurance regarding the accuracy of the Industry Date, and the Industry Data has not been independently verified by the Company.

Competent Person Statement

Sections of information contained in this report that relate to Exploration Results were compiled or reviewed by Mr Clinton Dubieniecki BSc (Hons), who is a Member of the Australian Institute of Geoscientists, Member of Australian Institute of Mining and Metallurgy, and is a full-time employee of Orpheus Uranium Limited. Mr Dubieniecki has sufficient experience which is relevant to the style of mineral deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the "Australasian Code for Reporting of Mineral Resources and Ore Reserves". Mr Dubieniecki consents to the inclusion in this report of the matters based on this information in the form and context in which it appears.

Notes on Shares on Issue, Price and Cash & Liquid Investments

* Cash balance $4.96M with Liquid Investments $1.05M (ORP holds 3.75M shares in Prospect Resources (ASX: PSC)) as last reported in associated with 2026-Q2 Activities report

+ 20M shares to be issued upon completion of Oobagooma Sale Agreement with Elevate Uranium (ASX: EL8)

^ 5M shares to be issued upon settlement (2.5M) and completion (2.5M) of Marree Sale Agreement with Adavale Resources (ASX: ADD)

Overview / Investment Highlights

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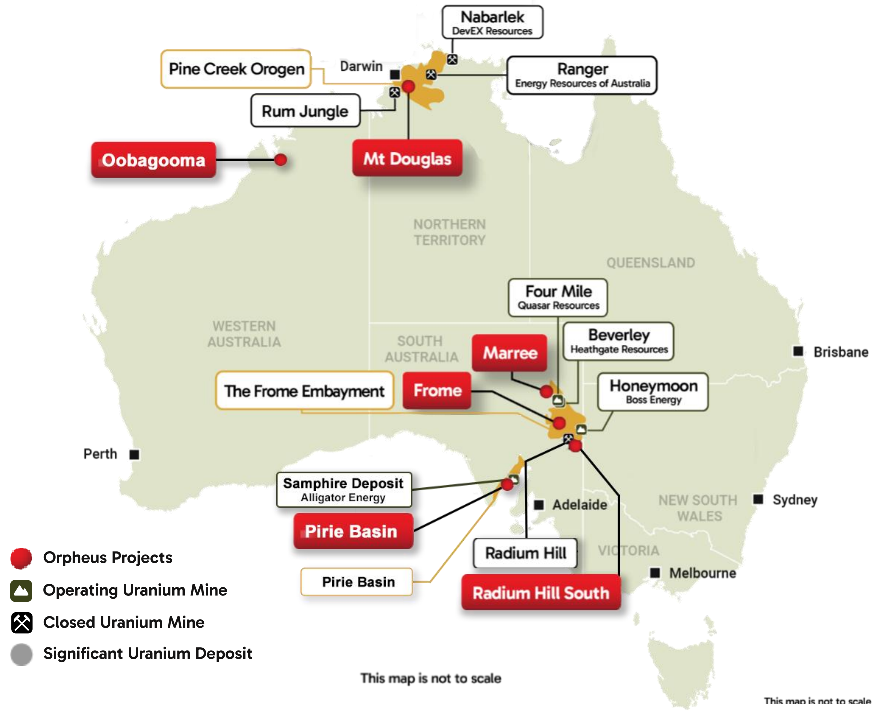


A Focus on Portfolio Development & Discovery

- **Pure-play uranium investment opportunity** with 100% ownership, offering strong leverage to uranium market fundamentals
- **Exposure to tier-one uranium jurisdictions** with supportive regulatory frameworks (SA, NT) recently extending into Western Australia (WA)
- **High-impact and developing uranium exploration portfolio-** targeting underexplored Australian assets with district-scale discovery potential (e.g., Marree and Oobagooma)
- **Strategically positioned portfolio** near established JORC resources (>60Mlbs), leveraging proven geological systems to reduce risk and enhance upside (e.g., Frome and Pirie Basin)
- **Led by an experienced, technically proven team** with a track record in world-class uranium operations

Shares on issue+^ (16 Sept 2026)	Share Price (16 Sept 2026)	Market Cap (16 Sept 2026)	Cash & Liquid Investments* (30 June 2026)	Cash Raised Since Previous Quarterly (Gross)
399.3M	$0.13	$52M	$6.01M	$4.25M

Overview / Project Pipeline

AS AN INDUSTRY, WHEN WE EXPLORE FOR URANIUM, WE DISCOVER URANIUM!

Business Development (incoming Assets) →

Mt Douglas (NT)

Mundaerno (SA)

McArthur (NT)

Pirie Basin (SA)

Marree* (SA)

Frome (SA)

Radium Hill South (SA)

Oobagooma* (WA)

Producing Assets →

01. Greenfields Exploration

02. Advanced Exploration

03. Exploration Target

04. JORC Resource

DUAL STRATEGIC APPROACH: LEVERAGING DISTINCT URANIUM-SPECIFIC EXPERIENCE

Project rationalisation routinely occurring to minimise unnecessary outgoings, and maximise portfolio value

* Sale agreement executed, working to completion of sale

Overview / Near Term Milestones

2026: Advancing the Portfolio

- **Progress highly prospective South Australian projects** through regulatory approvals as to **enable 'decision to drill', *targeting sedimentary-style mineralisation*** (e.g., Frome, Pirie Basin and Marree)
- **Complete Orpheus' inaugural drill program,** as to refine project stratigraphic and redox interpretation, whilst building pathway toward future resource-scale evaluation
- **Complete Oobagooma sale agreement,** continue development of geological and resource modelling to **publish exploration target**, alongside land access agreements
- **Continued refinement of portfolio** including project **generative assessments** of **geologically relevant tenure and projects** (e.g., Marree acquisition) - ongoing rationalisation
- **Position the Company for success through drill discovery and/or growth in the Uranium market with a high-quality advancing portfolio**

Key Projects / South Australia

Sedimentary-Style Mineralisation

Frome Uranium Project

Located in a globally significant Callabonna Sub-Basin ~12km west of Boss Energy's 33.1 Mlb. Gould's Dam Uranium Deposit[1]

Pirie Basin Uranium Project

Over 40km strike of highly prospective Pirie Basin - adjacent to Alligator Energy's 18 Mlb. Samphire[2] and 12 Mlb. Plumbush[3] Uranium Deposits

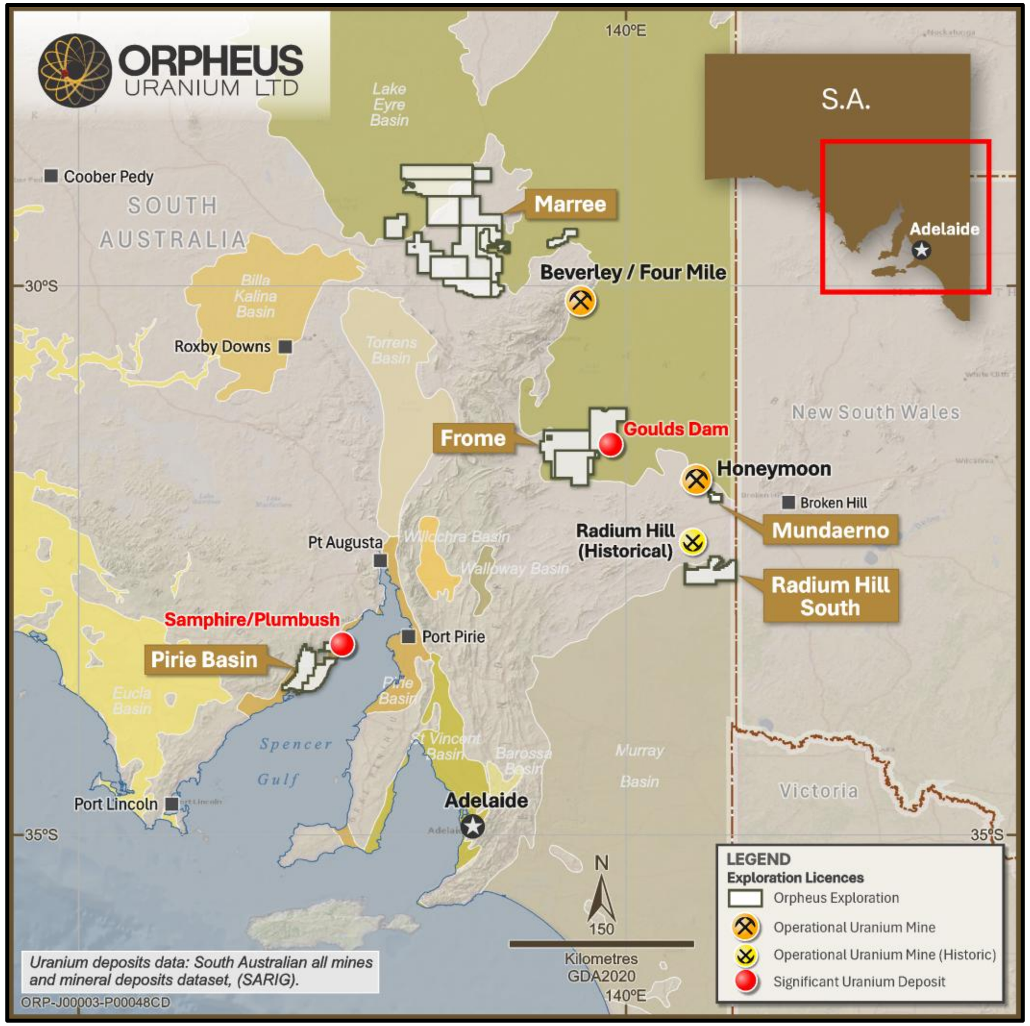
Marree Uranium Project

Progressing acquisition-led tenure consolidation near globally significant Flinders Ranges source region, expanding a district-scale sedimentary-style U opportunity

Leveraging results of previous explorers' activities who halted due to changing market conditions not lack of prospectivity

Proximal to Existing and Developing Operations

Proximal to operations and developing **assets recently approved** for uranium mining or development activities **in a jurisdiction that allows uranium mining**



1. Goulds Dam Uranium Deposit – Resource - Boss Energy Limited ASX: BOE - Combined Indicated (23%) and Inferred Resource (77%) – Average Grade 388 ppm U3O8 with Contained 33.1 Mlbs. U3O8. Refer to ASX: BOE announcement dated 19 March 2026.

2. Samphire Uranium Deposit – Alligator Energy Limited ASX: AGE - Increased Mineral Resource Estimate and Upgrade of Indicated Resource for the Blackbush Deposit, Samphire U Project. (18.0 Mlbs. at an average grade of 676ppm U3O8). Refer to ASX: AGE announcement dated 06 May 2025

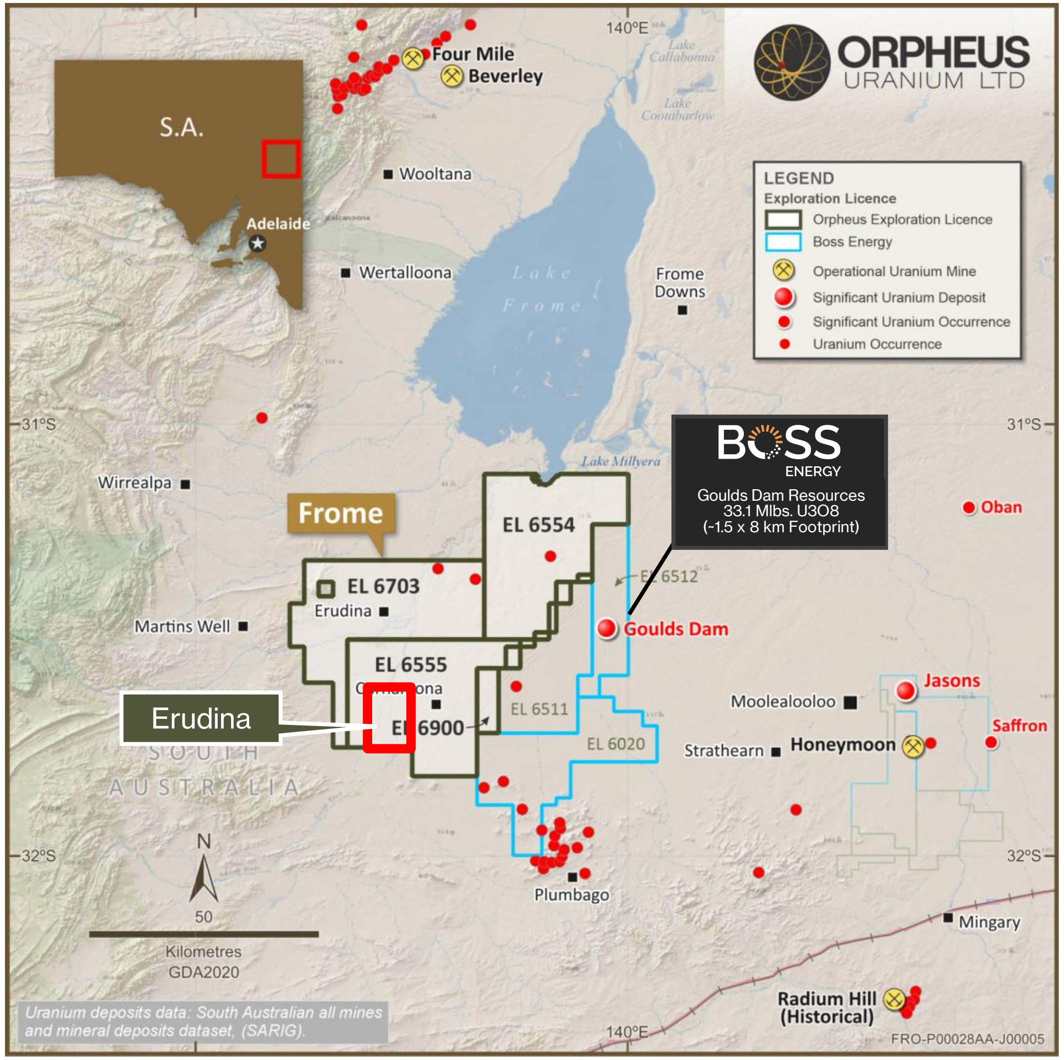
3. Plumbush Uranium Deposit – Alligator Energy Limited ASX: AGE – Samphire Mineral Resource Grows 67% to 30 Mlbs U3O8 Following Addition of Plumbush Inferred Mineral Resource (12.0 Mlbs. at an average grade of 370ppm U3O8). Refer to ASX: AGE announcement dated 19 June 2026

Frome Project

Advanced Exploration

Data-rich, underexplored uranium project in a proven basin

- Positioned within the **Callabonna Sub-basin** within (Lake Eyre Basin), which **hosts** the **producing Four Mile** and **Honeymoon Uranium Mines**
- **Adjacent to** and **sharing geological synergy** with developing **33.1Mlb. Goulds Dam uranium deposit**
- Mechanisms for (**source, transport & trap**) and evidence of Uranium mineralising system (**historic intersects >1,000ppm eU3O8**)
- Inaugural drill program designed to **refine updated stratigraphic and redox interpretation** along with **pathway toward future resource-scale evaluation** → First drill program in ~15 years in project area



Pirie Basin Project

Advanced Exploration

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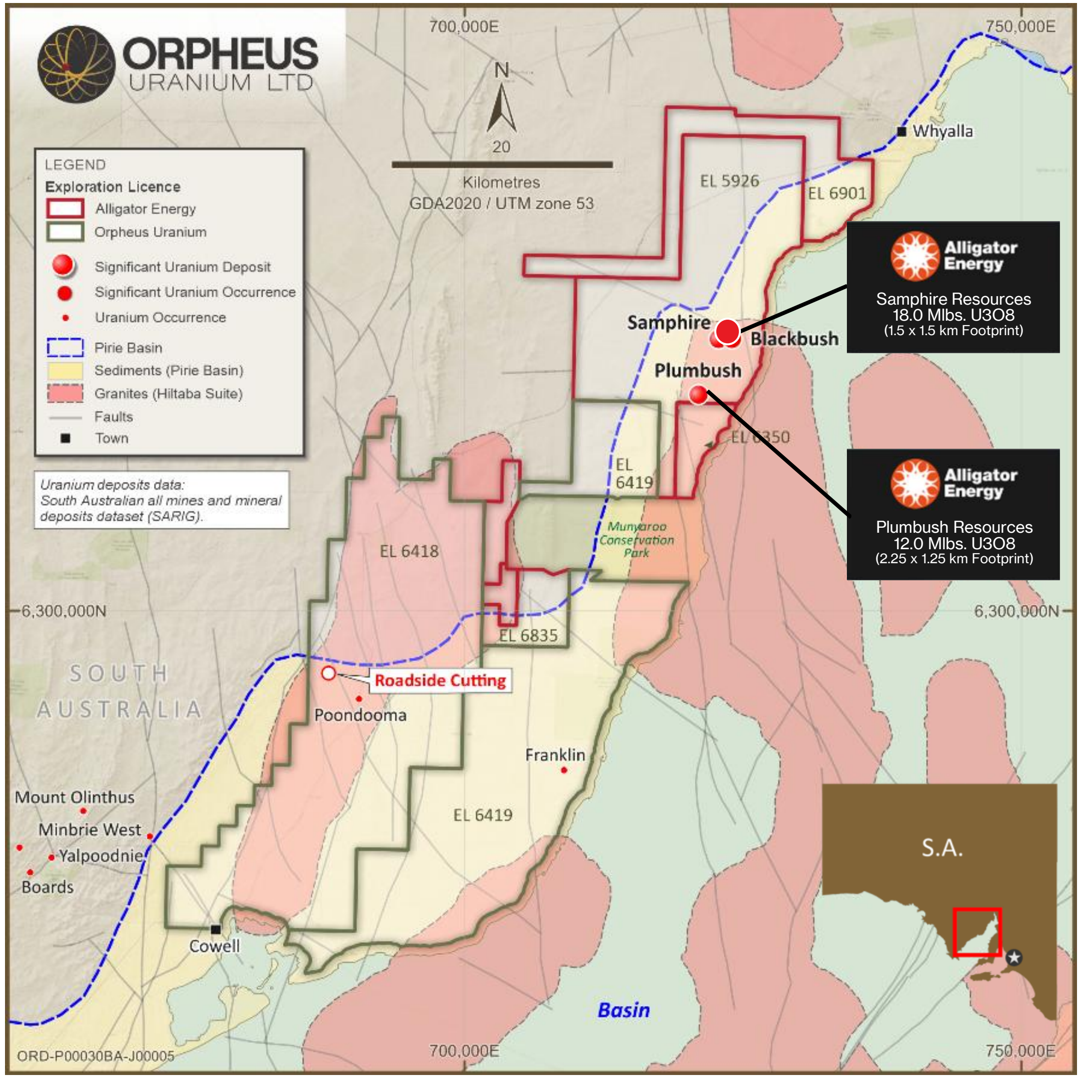
First time exposure to uranium focused junior explorer

- Over **40km strike** of **highly prospective Pirie Basin sediments** which are **host** to the **30 Mlb. (U) Samphire/Plumbush deposits** and **underlain** by **fertile granites**
- **Pirie Basin one of only two basins** in South Australia to host sedimentary-style uranium deposits that have **active advanced staged feasibility or producing in-situ recovery uranium projects**
- **Proximal, along strike** and **geological synergy** with **known and developing uranium deposit** → target area **underexplored** due to market conditions not geological setting
- **Progressing regulatory approvals** → positive preliminary engagement with key stakeholders



Marree Project

Advanced Exploration

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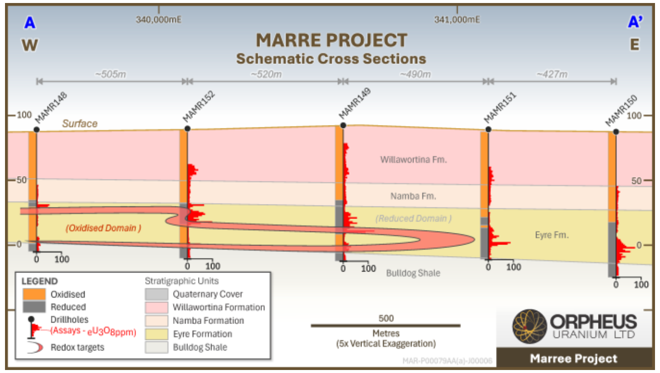
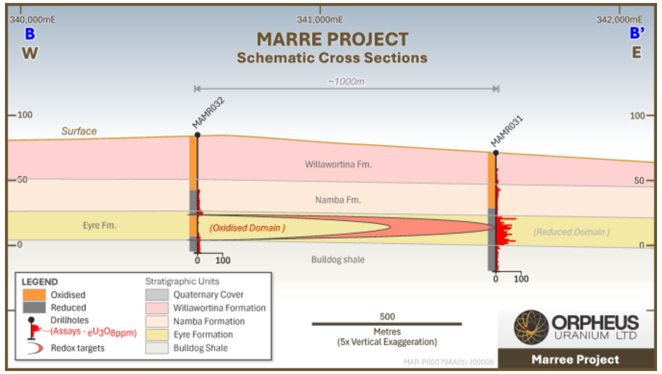
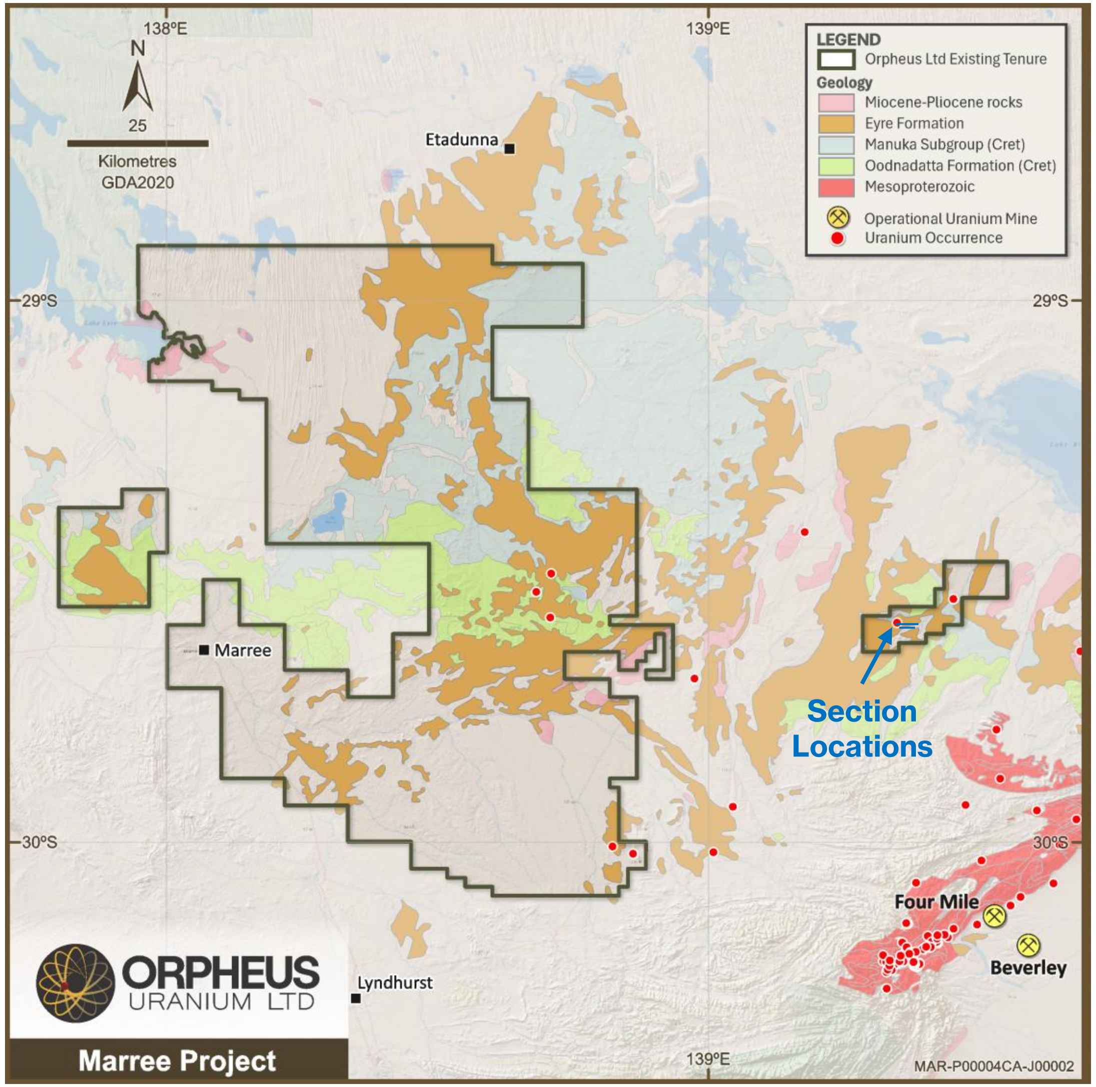
Strategically developing district-scale tenure

- **District-scale uranium position** in the Lake Eyre Basin, **host to known** and **prospective for** sediment-hosted **palaeochannel uranium mineralisation**
- Execution of sale agreement to **acquire surrounding tenure** strengthens Orpheus' footprint and **include intersects up to 450ppm eU3O8**
- **Strategic exposure** within **district occupied by private global uranium explorers & producers** (only ASX-listed company with district scale tenure)
- Incoming datasets being interrogated by Orpheus' in-house geological team to refine drilling targets & validate pathway toward potential Exploration Target
- Native Title Mining Agreements (**NTMAs**) established over existing & incoming tenure - **enables expedited pathway** for **regulatory approvals/drilling**







Key Project / Western Australia

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Oobagooma Uranium Project [4]

Targeting "Sedimentary" redox-style mineralisation
Hosted within Yampi Sandstone of the Carboniferous Canning Basin

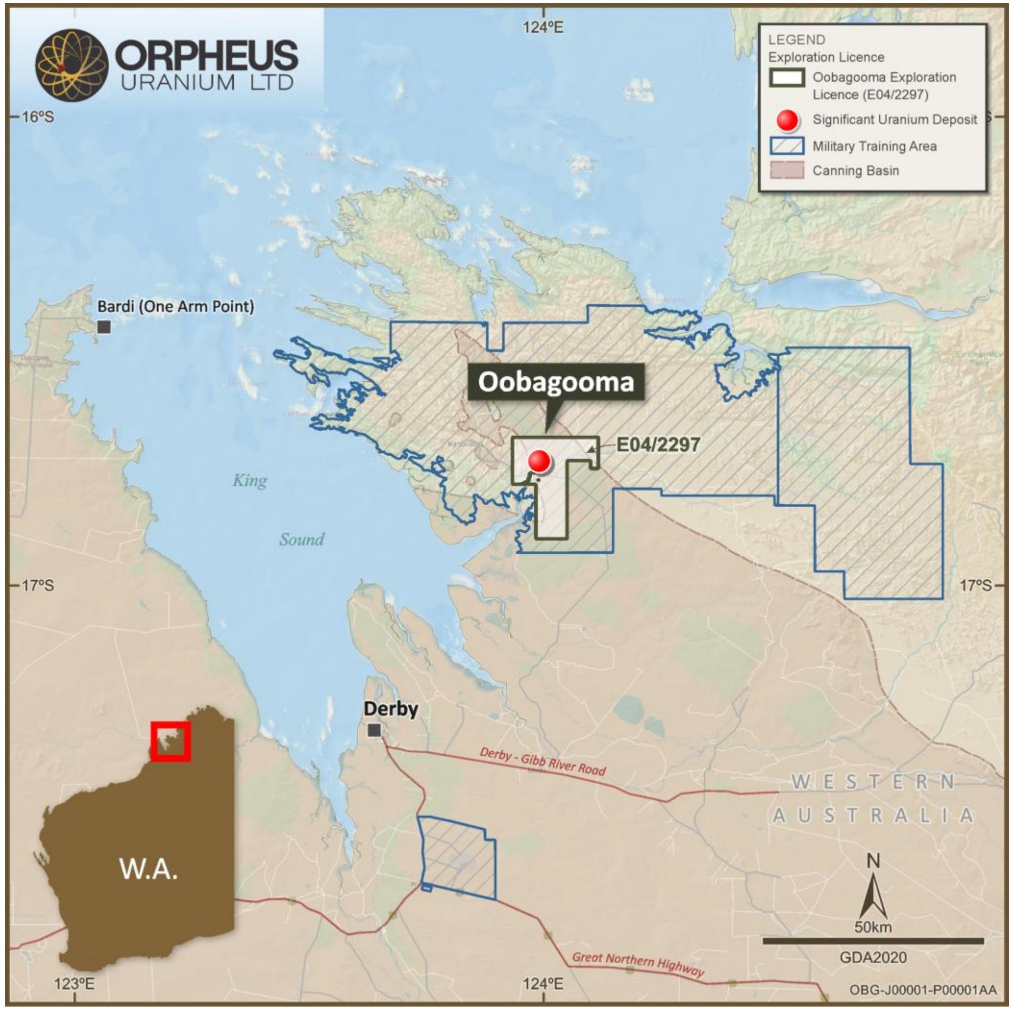
Limited Contemporary On-ground Exploration
Discovered in 1981 by Australian French Mining & Exploration Company (Afmeco), most recent drilling in 1983

Geological setting conducive to uranium mineralisation
Evidence of mineralising source rocks, transport mechanism and geochemical trap sites

Elevated U grades – Forty-Eight (48) holes with GT* > 1,000 (m x ppm)
Known U mineralisation over approximately 4 km of strike and 1.5 km width, includes:

- 2.2 m at 3,581 ppm eU3O8 from 47.5 m (CAN-S-237)
- 2.45 m at 1,870 ppm eU3O8 from 68.2 m (YAM-S-110)
- 1.65 m at 3,775 ppm eU3O8 from 53.15 m (YAM-S-140)

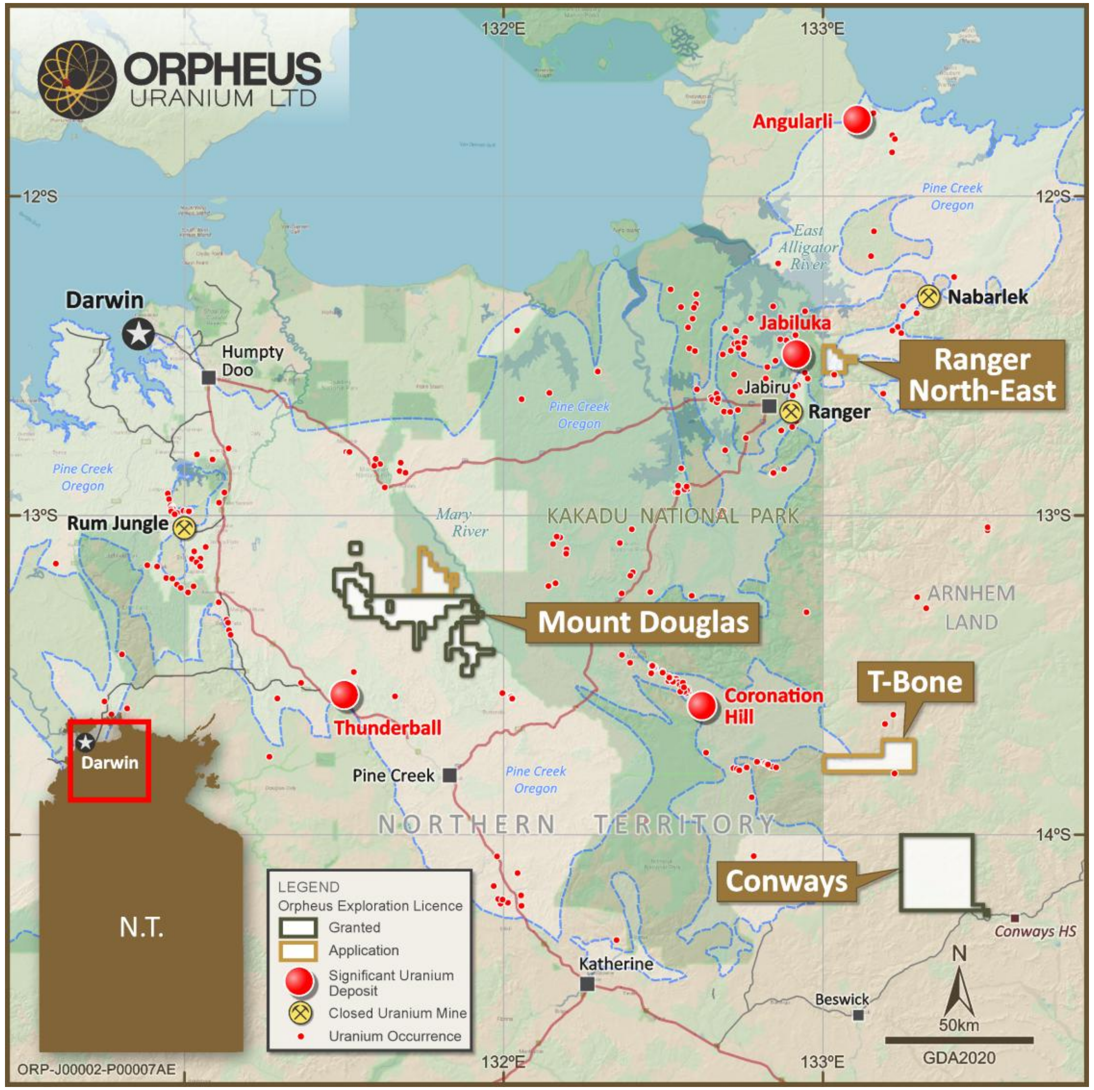
Progressing to completion of sale agreement
Conditions precedent considered standard for a transaction of this nature are being progressed (completion timeline extended due to transfer of third-party agreements)



Key Projects / Northern Territory

Mt Douglas & Conways

- **Targeting the Pine Creek Orogen**
  Exposure within the proven Rum Jungle / Pine Creek uranium province demonstrate broader province-scale potential
- **High-Grade Unconformity & Vein-Style Mineralisation**
  Retained high-grade discovery optionality while Orpheus prioritises sediment-hosted portfolio development
- **Technical and Regulatory endorsement**
  NTGS regional and co-funded gravity work supports systematic refinement of priority work areas, Mt Douglas' high-priority drill targets endorsed within approved Mining Management Plan (MMP)



Summary / Why Orpheus Uranium?

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Scalable Development of Uranium Portfolio with Knowledgeable Dynamic Exploration Approach

- **Core exposure** to **South Australia** and the **Northern Territory**, Australia's **premier uranium jurisdictions** with potential upside to Western Australian sector through incoming asset
- **Multiple projects** with **multiple prospects** positioned near operating, developing and historically mined uranium systems
- Applying **proven sediment-hosted uranium workflows** to **data-rich projects** in **districts with known uranium systems**, regulatory precedent
- Lead by **specialist uranium team** with **contemporary sediment-hosted exploration and production experience**
- **Disciplined execution model**: compile, reinterpret, rank, a permit, drill and refine
- **Multiple potential catalysts across various stages of the exploration and development cycle**

Summary / Corporate

ORPHEUS URANIUM LTD

CAPITALISATION DATA

Shares on issue+^ (16 September 2026)

399.3M

Share Price (16 September 2026)

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Market Cap (16 September 2026)

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Cash& Liquid Investments (30 June 2026)*

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Cash Raised Since Previous Quarterly (Gross)

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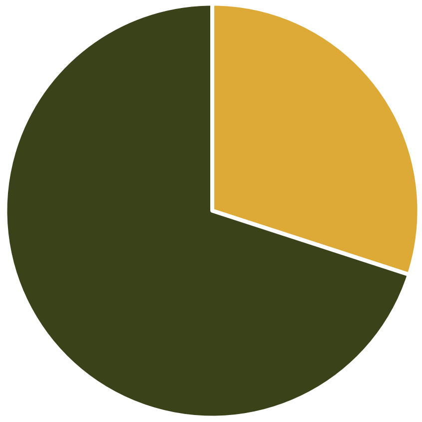
** Cash balance $4.96M with Liquid Investments $1.05M (ORP holds 3.75M shares in Prospect Resources (ASX: PSC)) as last reported in associated with 2026-Q2 Activities report*

+ and ^ → See Disclaimer page for more details

ASX: ORP Shareholder Spread



70.0% Top 20 Shareholders

30.0% Outside Top 20 Shareholders

12 Month Share Price

5 Year Uranium Spot Price (USD/Lb.)

BOARD & MANAGEMENT

Clint Dubieniecki – Managing Director & CEO
Simon Mitchell – Non-Exec Chairman
Todd Williams – Non-Exec Director
Richard Willson – Company Secretary

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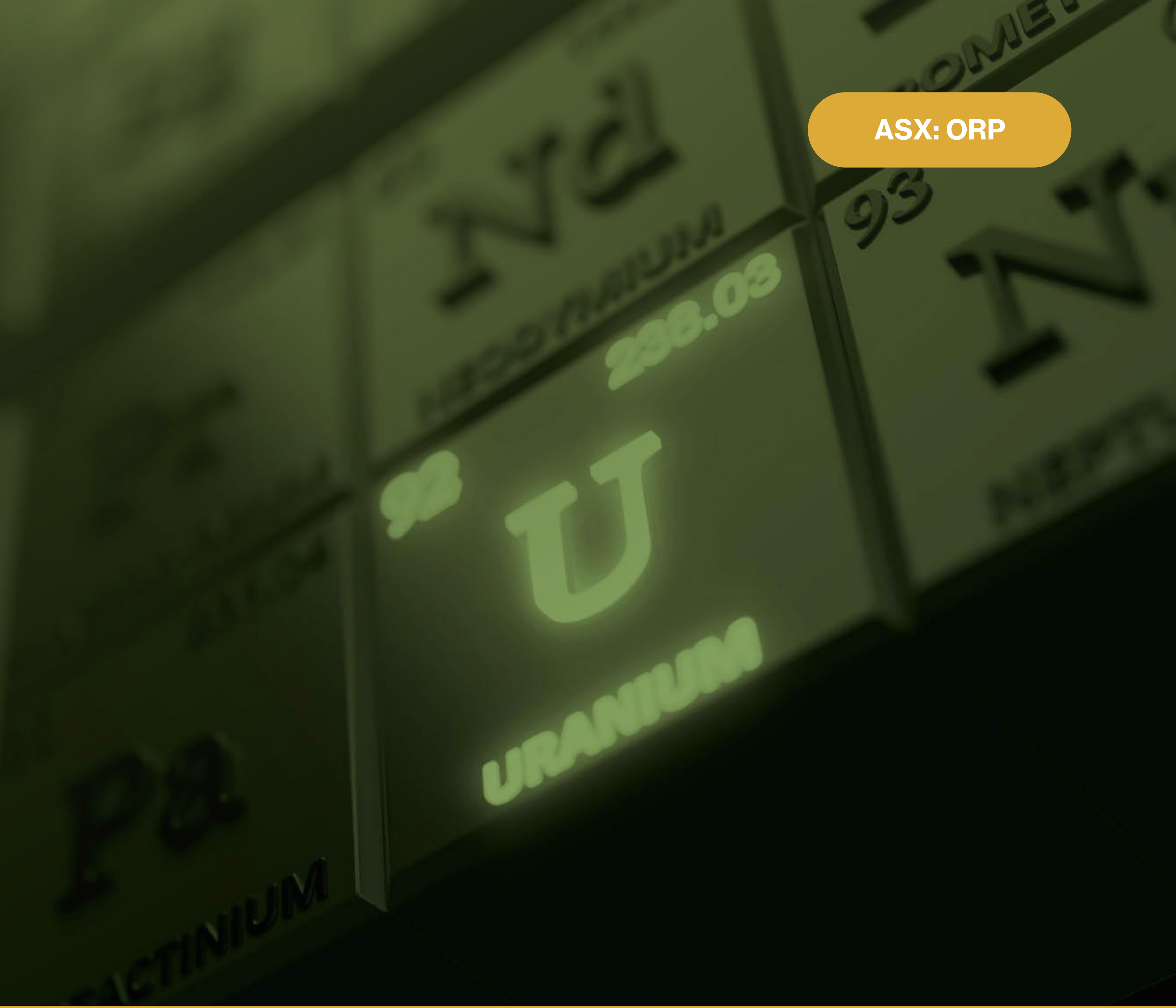
Contact Us



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Comparable Projects

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Orpheus reports Mineral Resources of uranium mines, deposits or past production that it considers comparable to the style and location of uranium mineralisation in which it explores, as presented within this presentation, and listed in the table herein.

Project	Development Phase	Location	Company / Operator	Resource Classification	Average Grade (ppm U_3O_8)	Contained Metal (Mlbs, U_3O_8)	Source
Honeymoon Uranium Mine	Mine	Lake Eyre Basin/Callabonna Sub-basin South Australia	Boss Energy Limited ASX: BOE	Mineral Resource	660	36	*Refer to ASX: BOE announcement dated 23 January 2024* *Note: 2021 Enhanced feasibility study (EFS) withdrawn in 2025 - Refer to ASX: BOE announcement dated 18 December 2025*
Jasons Uranium Deposit	Resource			Combined Indicated and Inferred Resource	410	12	Refer to ASX: BOE announcement dated 19 March 2026
Goulds Dam Uranium Deposit	Resource			Combined Indicated and Inferred Resource	388	33.1	Refer to ASX: BOE announcement dated 19 March 2026
Saffron Deposit	Resource		Marmota Limited ASX: MEU	Inferred Resource	557	5.4	Refer to ASX: MEU announcement 26 October 2023
Radium Hill Historic Mine	Historic Mine	Curnamona Province South Australia	Areas reserved from the Mining Act, 1971 and Opal Act, 1995	Past production	1,310	2.6	Refer to https://minerals.sarig.sa.gov.au/MineralDepositDetails.aspx?DEPOSIT_NO=962
Samphire Uranium Deposit (Blackbush)	Resource	Pirie Basin (Eyre Peninsula)	Alligator Energy Limited ASX: AGE	Combined Indicated and Inferred Resource	676	18	Refer to ASX: AGE announcement dated 06 May 2025
Plumbush Uranium Deposit (broader Samphire Project)	Resources		Alligator Energy Limited ASX: AGE	Inferred Resource	370	12	Refer to ASX: AGE announcement dated 19 June 2026

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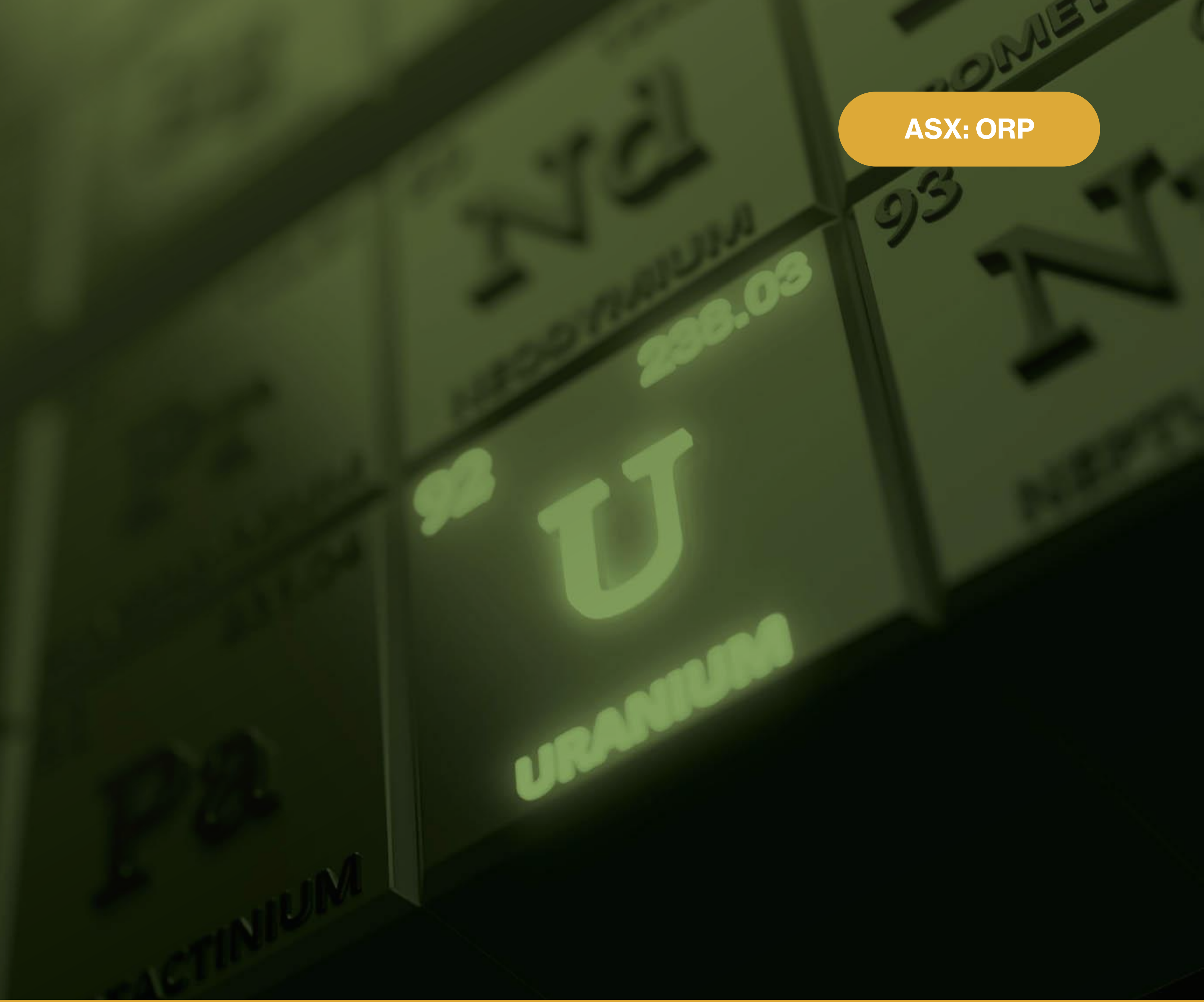

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