

ASX: ORP



Unlocking Tomorrow's Energy: Explore the Future of Uranium with Orpheus

TRIBECA FUTURE FACING COMMODITIES CONFERENCE
2nd APRIL 2025

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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 Data, 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 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.

Major Investment Highlights



Why Orpheus Uranium?

- ✓ **Junior uranium focused exploration** company with a **portfolio developed** within the two jurisdictions of Australia that allow **uranium exploration** and mining, **South Australia & Northern Territory**
 - ✓ **Strategic development** of the project portfolio to contain geologically relevant tenure that promotes long term value → Advancing towards market leading uranium exploration tenure
 - ✓ Targeting **tier-1 (world-class) uranium exploration regions**, on tenure with confirmed presence of mineral systems
 - ✓ Advancing 100% owned, advanced uranium exploration projects
-
- ✓ **BIMODAL STRATEGY → APPROACH LEVERAGING OFF IN-HOUSE URANIUM SPECIFIC EXPERIENCE**
 - ✓ Continued development of core assets to **advanced-staged activities** including drilling
 - ✓ Reviewing project(s) for acquisition/generating exploration targets within established mineralising jurisdictions

The Nuclear Cycle & Discoveries Through Time

URANIUM IS AN ENABLER FOR WHICH EXPLORATION HAS BEEN CYCLIC BUT HAS LED TO DISCOVERIES

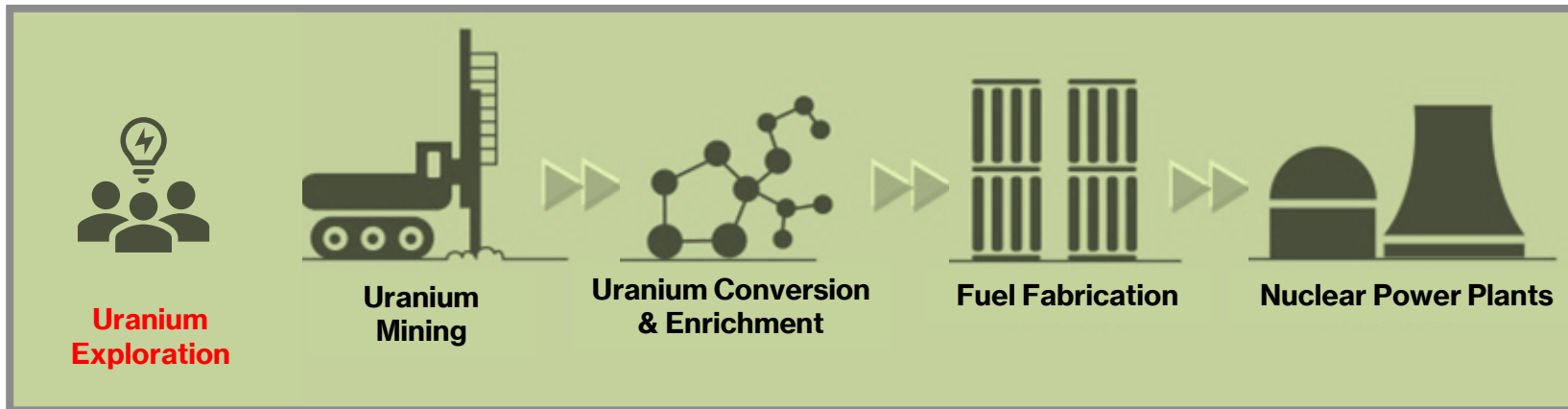


Image modified from: <https://www.orano.group/en/unpacking-nuclear/all-about-nuclear-energy>

1950s & 1970s

- 1949 Rum Jungle
- 1953 South Alligator River
- 1969 Ranger
- 1969 Beverly
- 1970 Koongarra
- 1970 Narbalek
- 1971 Jabiluka
- 1972 Honeymoon

2000s

- 2005 Four Mile East
- 2005 Four Mile West
- 2007 Blackbush
- 2008 Thunderball
- 2009 Pepegooona
- 2011 Pannikan

2020s

WHEN WE EXPLORE FOR URANIUM, WE DISCOVER URANIUM!

Year of discovery for select South Australian & Northern Territory Uranium Deposits/Prospects

Sourcing Uranium for Defence

Development of nuclear energy

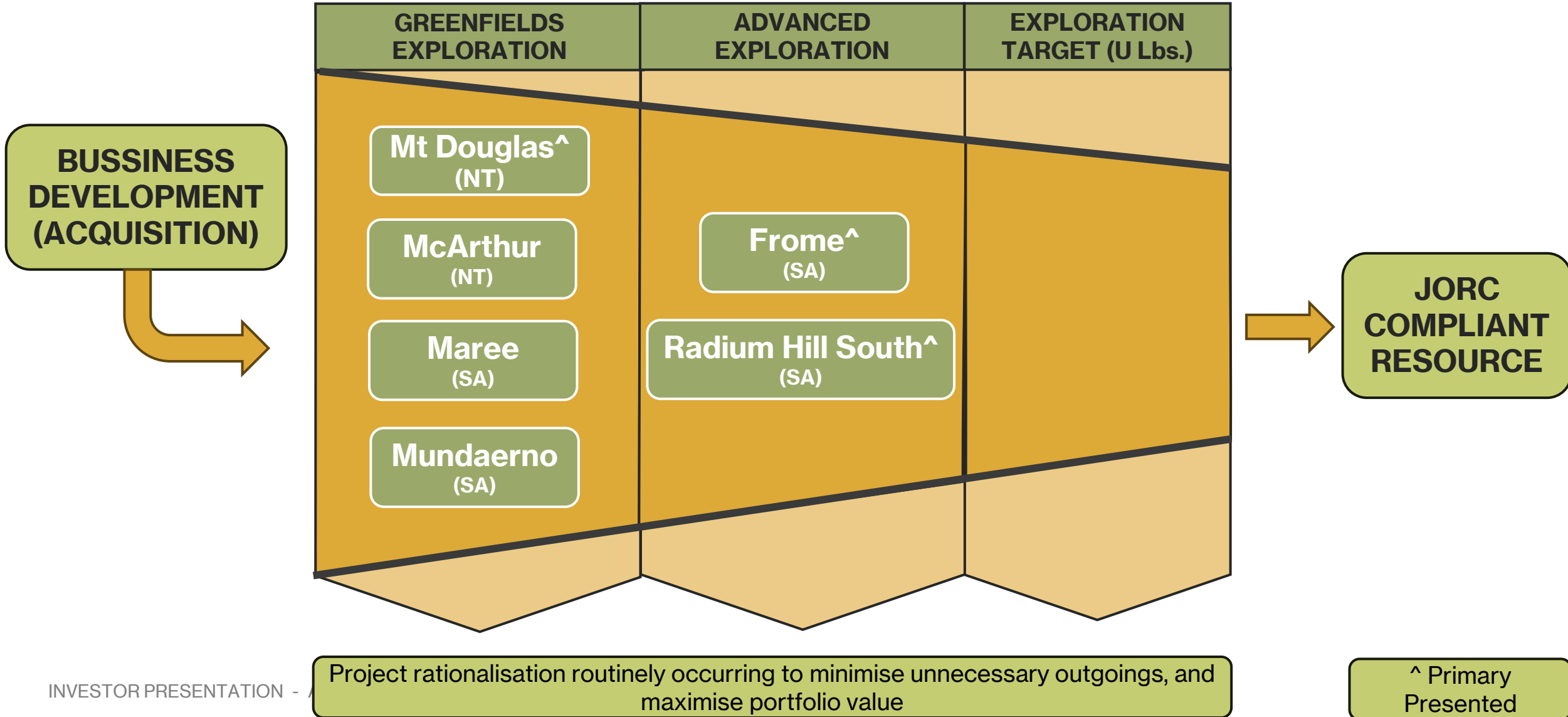
Renaissance of nuclear power

2011 Fukushima

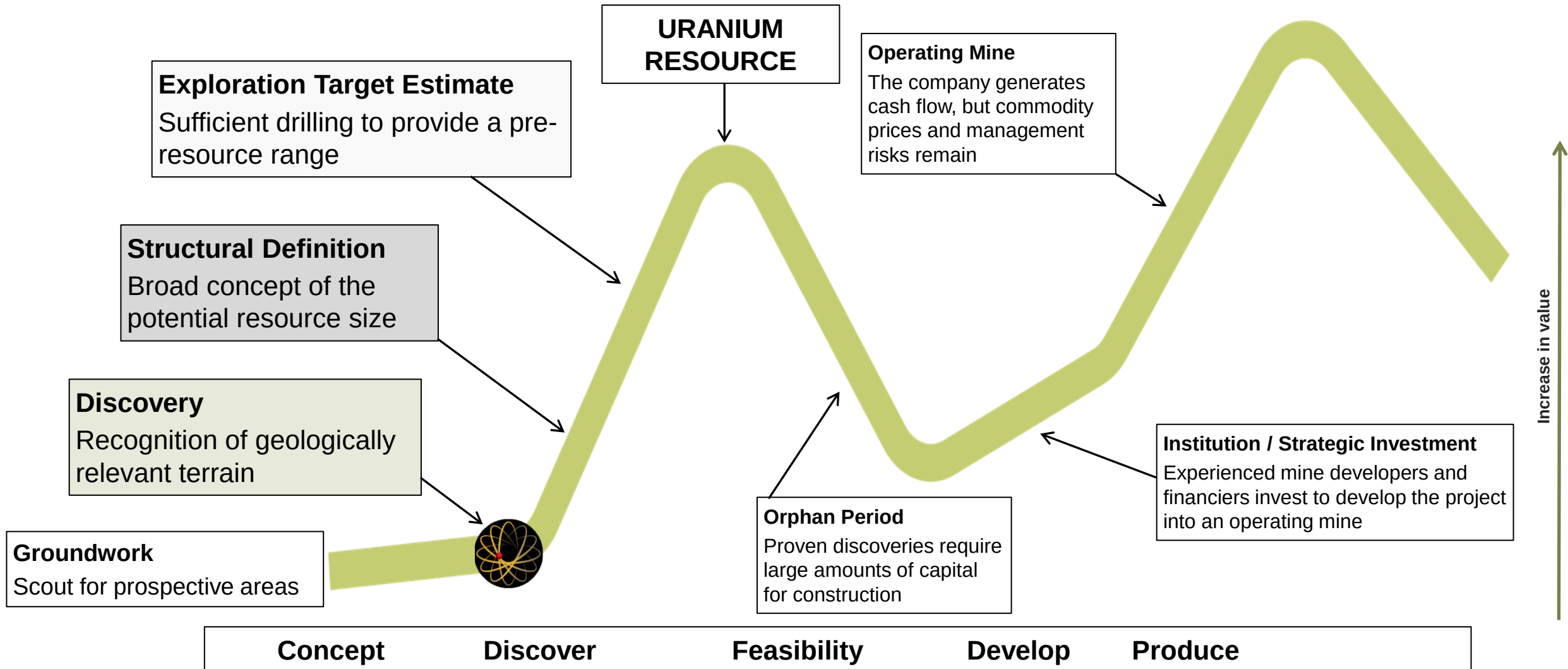
Decrease in U stockpiles

Major events driving Uranium Markets

Orpheus Uranium Project Pipeline



From Discovery to Resource



Uranium Deposit Types

SEDIMENTARY-STYLE URANIUM (SA)

- ✓ Mineralisation occurs within permeable units, typically but not limited to saturated unconsolidated permeable sandstones
- ✓ Uranium sourced from surrounding enriched uriferous rocks e.g., granites (SAs Frome Embayment contains some of the most uriferous surface and near surface rocks globally)
- ✓ Recovered through In-Situ Recovery (ISR) – lower cost, and dynamic operations



Source (Heathgate Resources Webpage): <https://heathgate.com.au/projects/>

UNCONFORMITY-STYLE URANIUM (NT)

- ✓ Mineralisation occurs peripheral to major structures within Proterozoic crystalline basement (commonly meta-sediments)
- ✓ Uranium sourced from either oceanic brines associated with sedimentary basins or enriched hydrothermal brines from beneath
- ✓ Recovered through conventional (open-cut or underground) operations

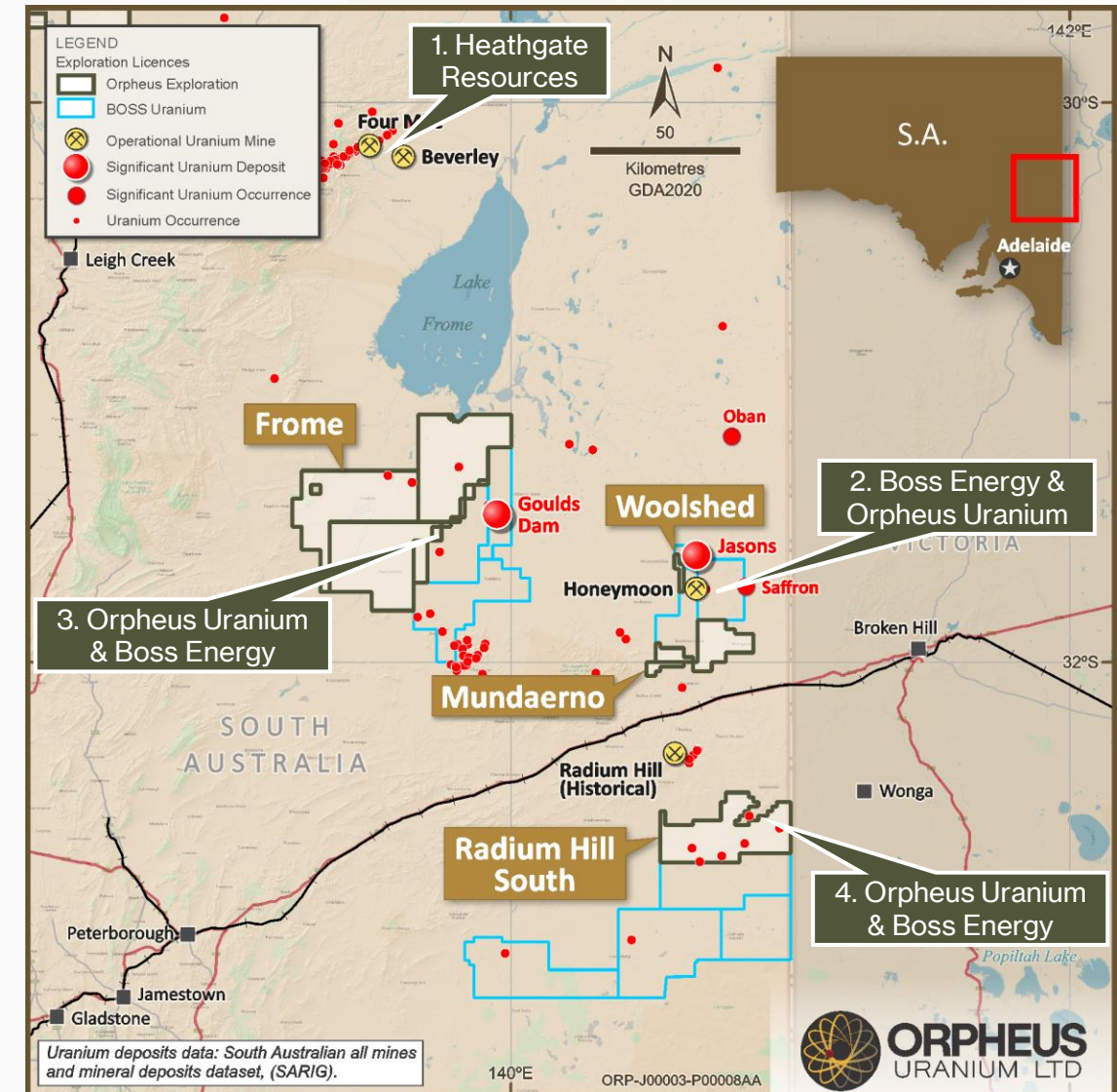


Key South Australian Projects

SEDIMENTARY-STYLE URANIUM

Leveraging results of previous explorers who halted work in 2011-14

- **Frome Project**
~12km west of **Gould's Dam Uranium Deposit**, located in a globally significant location in terms of discovered economic sandstone hosted uranium deposits
- Callabonna Sub-Basin (SA) – a good place for a uranium mine
- **Radium Hill South Project**
~20 km south of **Radium Hill Uranium Field** and hosts five uranium occurrences
- **Proximal to Existing and Developing Operations**
Proximal to operations or developing **assets** that have **gained 'relatively recent' approval** for uranium mining in a jurisdiction that allows uranium mining
- **Project Generation**
 - Ongoing assessment for acquisition of projects that contain geologically relevant settings/allow on-ground advanced stage activities



Frome Project

ADVANCED
EXPLORATION

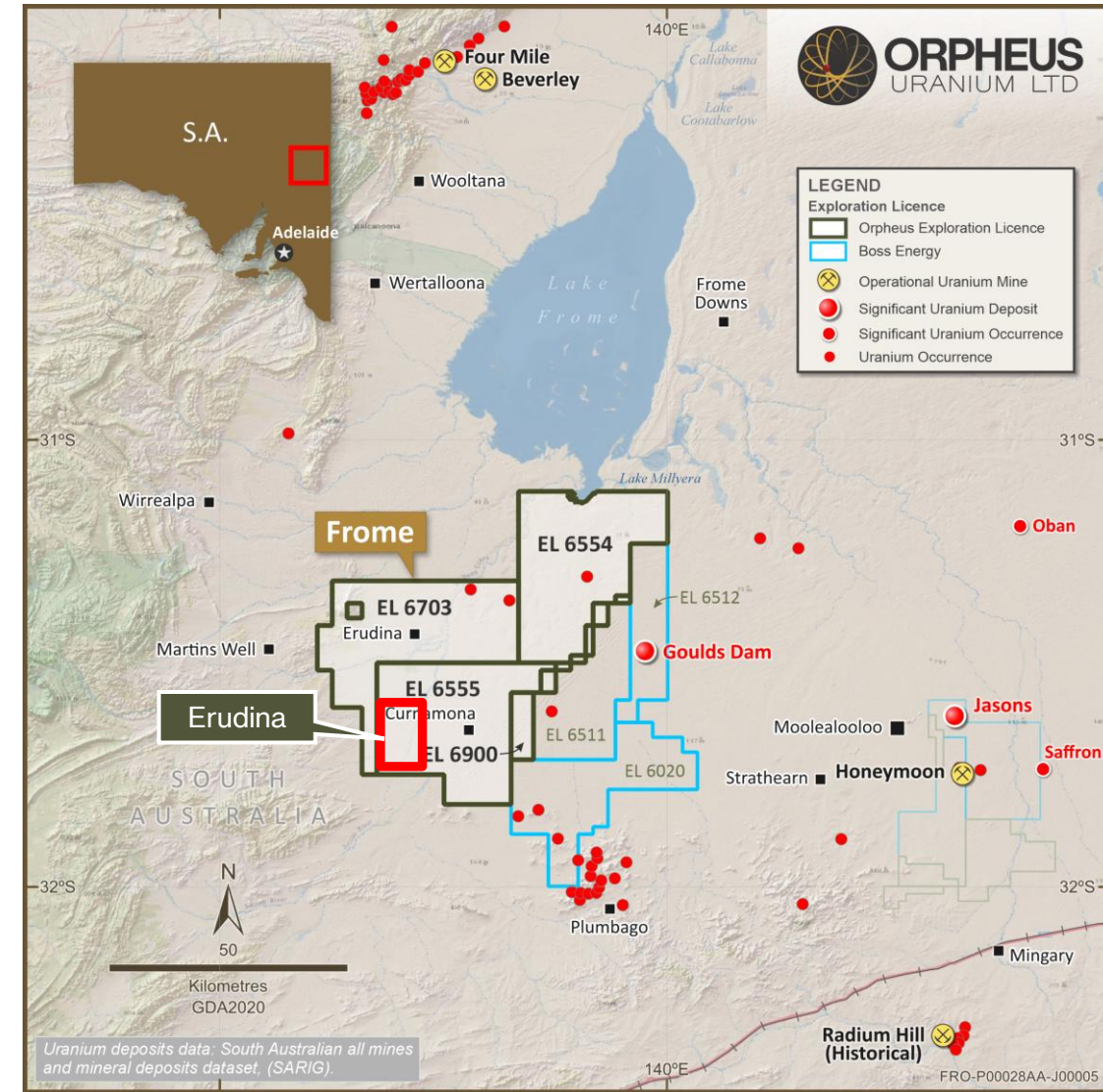


MULTIPLE TARGETS IN MULTIPLE PALAEOCHANNEL SYSTEMS

- ✓ Mechanisms (**source, transport & trap**) for Uranium mineralising systems similar to regional deposits in Namba and Eyre Formations
- ✓ Contains a significant footprint of prospective paleochannels:
Hosts known uranium occurrences – mineral system located
- ✓ Actively exploring - technical reviews, reconnaissance, and stakeholder engagement in preparation for **targeted and dynamic drilling programs**
- ✓ **Erudina Exploration Target Area**
Initial testing of multiple targets proximal to Goulds Dam (~12km)



AGE	BASIN	STRATIGRAPHIC UNIT	THERMAL MATURITY
CENOZOIC	Lake Eyre Basin (Callabonna Sub-basin, ind. Poortana Trough)	Coonabrine Fm & equivalents	Sub-mature
		Eurinilla Fm & equivalents	
		Willawortina Formation	
		Namba Formation	
		Eyre Formation	
MESOZOIC	Eromanga Basin (Frome Embayment)	Mackunda Formation	Marginally mature
		Oodnadatta Formation	
		Coorikiana Ss	
		Bulldog Shale & equivalents	
		Paraberana Ss	
		Cadna-owie Formation	



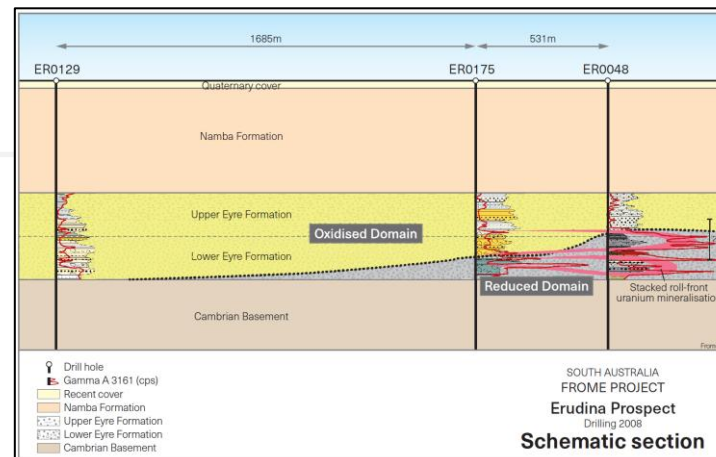
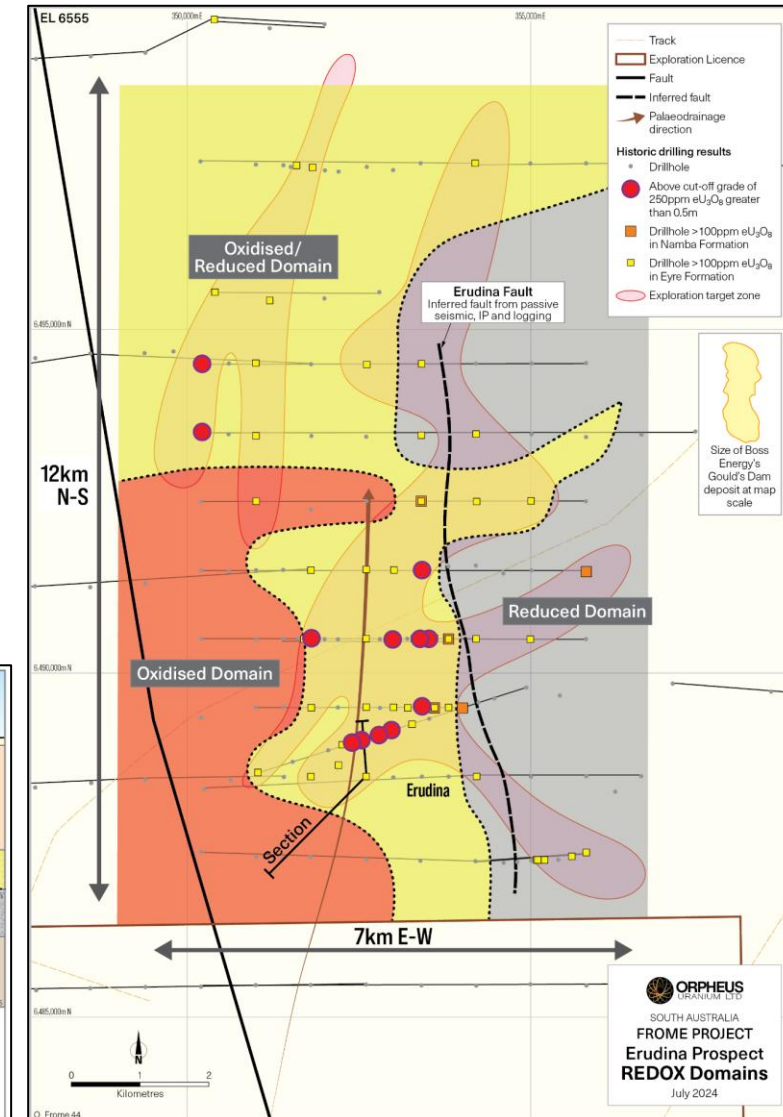
Frome Project - Erudina Prospect

ADVANCED
EXPLORATION



DEFINED DRILL READY TARGETS AWAITING REGULATORY APPROVAL

- ✓ Exploration target area extends across a 12km N-S by 7km E-W area, Based on wide spaced ~1km drill traverses
- ✓ Preliminarily established from downhole gamma grades, 56 historic drillholes contained >100ppm EqU3O8, with Peak grades >1,500ppm EqU3O8
- ✓ Development of subsurface reduced and oxidised sediments ("REDOX") model as a potential fluid-pathway and vector to higher-grade "roll front" style uranium mineralisation
- ✓ Continued extension of sedimentary REDOX characteristics into Erudina North



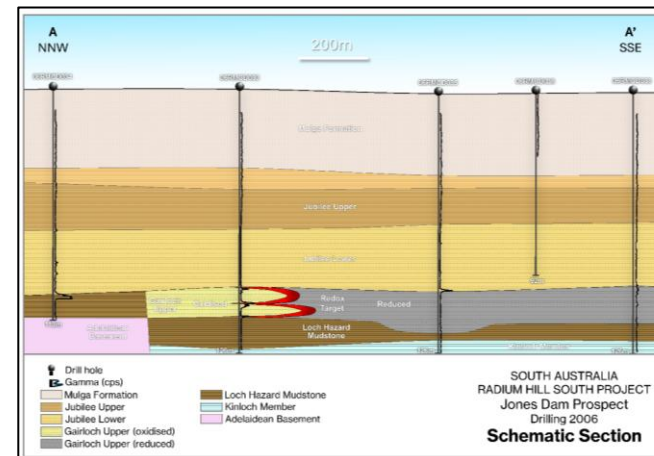
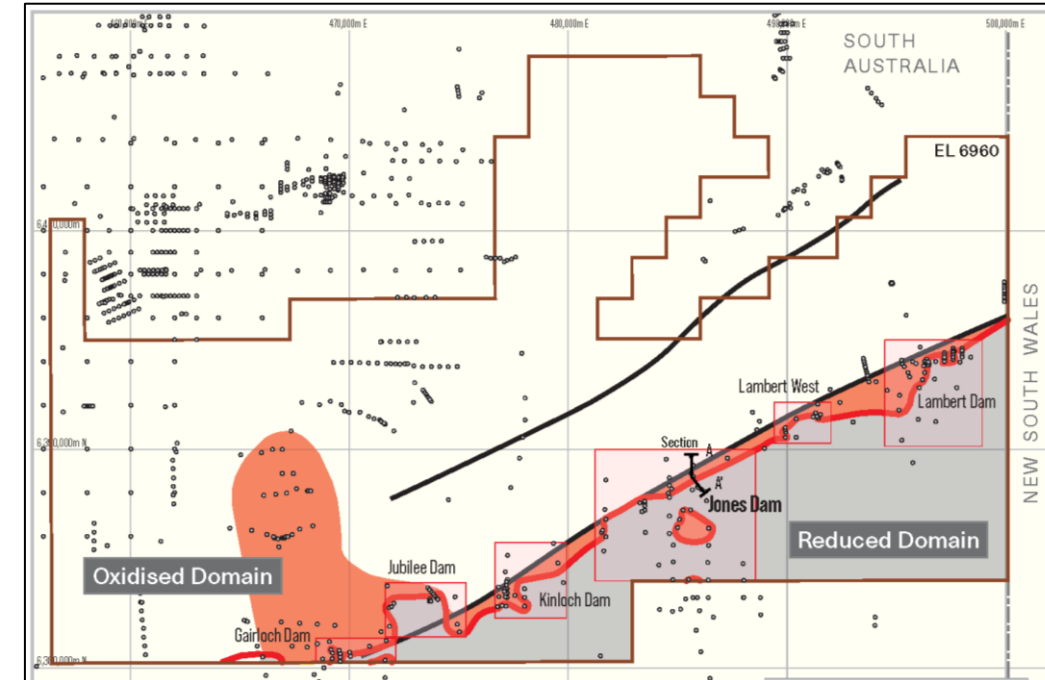
Radium Hill South Project

ADVANCED
EXPLORATION



FIVE EXISTING URANIUM PROSPECTS READY FOR IMMEDIATE FOLLOW-UP

- ✓ Mechanisms (source, transport & trap) for **uranium mineralising systems**, with **evidence of uranium mineralisation** at shallow depths of ~80 to 110m
- ✓ **Exploration Licence (EL) granted through competitive tenure**, Hosts **five uranium prospects** that were abandoned due to market conditions in 2011
- ✓ Located ~20km south of the highly radiogenic region of the historic **Radium Hill Uranium Field 2.6 Mlbs @ 1,310ppm U_3O_8**
- ✓ Regional NE to SW trending REDOX front identified based on re-interpretation of historical datasets , allows refined drill targets as project progressed towards drilling



Prospect	Historic Results
Gairloch	1.9m @ 400ppm U_3O_8 from 103.8m at the contact between the base of a sand channel and underlying black carbonaceous clay
Jones Dam	2m @ 401ppm U_3O_8 from 86m in a strongly anomalous zone over 5.1m, within steely grey sand
Kinloch Dam	3m @ 507ppm U_3O_8 from 105m in sand below a silcrete layer



Northern Territory

Significant region of historical production where Australia's large, high-grade deposits are discovered

- Targeting “Unconformity” and vein style mineralisation
Very underexplored, particularly in difficult-to-access areas of the Orogen
- Targeting the Pine Creek Orogen
“Australia’s economic Unconformity-Style mineral systems”
- Strategy of building ground position
Strategic play across the Orogen, preparing multiple drill targets for the medium term
- Key Project: Mount Douglas
Preparation for on-ground exploration activities at the end of wet season and working towards advanced-stage activities (i.e., trenching and drilling)



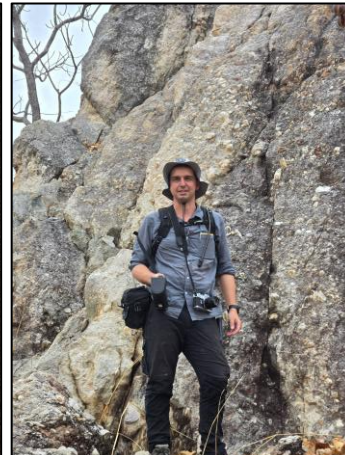
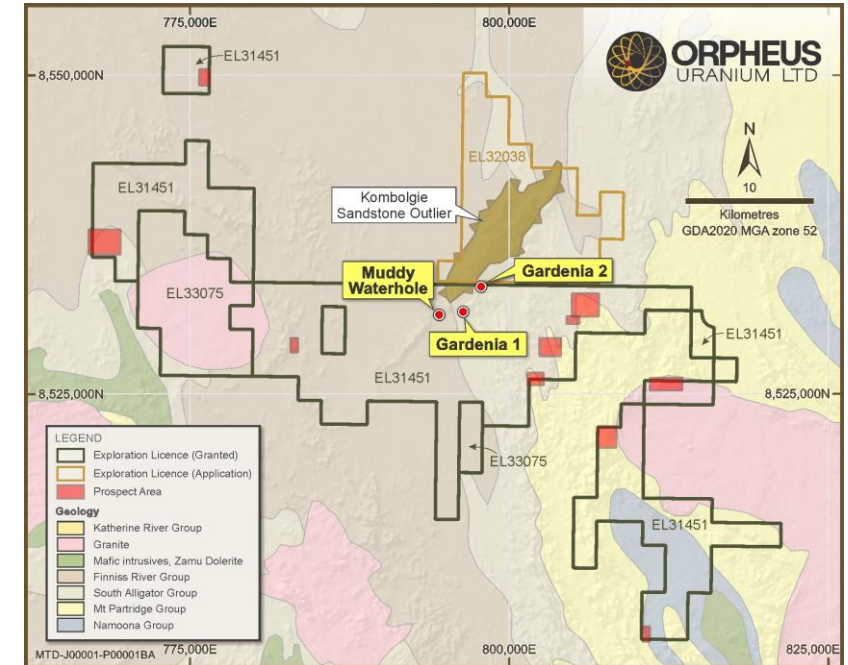
Mount Douglas Project

EARLY
EXPLORATION



PROSPECTIVE FOR UNCONFORMITY AND VEIN-STYLE URANIUM MINERALISATION

- ✓ Evidence of **surficial radiometric anomalies** mapped throughout tenure
- ✓ Mapped **unconformity** contact with overlying **Kombolgie Sandstone**
- ✓ **Reconnaissance, rock chip sampling and localised radiometric grids (to continue)**
- ✓ **Collaborative geophysical program with NTGS (completed and processing final results)**



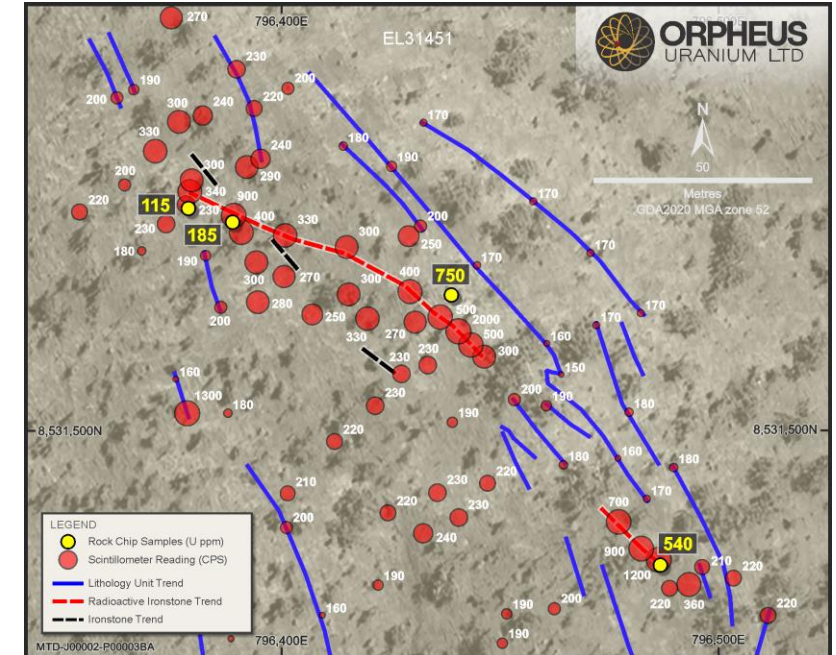
Mount Douglas Project – Gardenia 1

EARLY
EXPLORATION



PROSPECTIVE FOR UNCONFORMITY AND VEIN-STYLE URANIUM MINERALISATION

- ✓ Evidence of uranium mineralisation in rock chips up to **750ppm U**
- ✓ NTGS Government work approvals Mining Management Plan (MMP) granted
- ✓ Infill geophysics being planned based upon results of initial NTGS collaborative survey
- ✓ Continued stakeholder engagement and field planning during current wet season
- ✓ Advanced stage activities planned (subject to result of predecessor activities)
 - Trenching – Define extents of surface anomalism
 - Drilling of refined targets – subject to preliminary activities



Corporate Summary



CAPITALISATION DATA

Shares on issue

237.3M

Share Price (31 March 2025)

\$0.027

Market Capitalisation

\$6.4M

Cash (31 December 2024)

\$3.7M

Debt

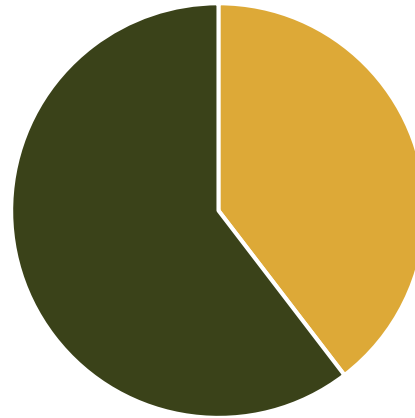
NIL

Liquid Assets (31 December 2024) *

\$0.8M

*Valuation of 8.33M shares in ASX:PSC (\$0.091) held as at time of last ASX released financial report

ASX: ORP Shareholder Spread



60.4%
Top 20 Shareholders

39.6%
Outside Top 20 Shareholders

BOARD & MANAGEMENT

Clint Dubieniecki – CEO

Mick Billing – Non-Exec Chairman

Simon Mitchell – Non-Exec Director

Todd Williams – Non-Exec Director

Richard Willson – Non-Exec Director & Co Sec

12 Month Share Price



5 Year Uranium Spot Price (USD/Lbs)





Uranium

The right commodity at the right time with very strong uranium price signal, robust demand growth, constrained supply response. Current uranium mine supply structural deficit a long time in the making.



Technical team providing unique insights

Ongoing development of technical team and support, with proven track record in uranium discovery, development and production.



Tenure situated within tier-1 (world-class) locations

Orpheus has developed a tenure portfolio within two of the best global uriferous jurisdictions, the Frome Embayment in South Australia and the Pine Creek Orogen in the Northern Territory.



Prospectivity

Significant recent investor interest in companies which have demonstrated success in this prime location, with Orpheus following up on known mineralisation established by previous explorers.



Developing a Project Pipeline

A company that is actively and strategically developing a project pipeline to best position the business for continued exploration success.

Comparable Projects

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 on pages 5, 8 and 9 of this presentation, and listed in the table herein.

Project	Development Phase	Location	Company / Operator	Resource Classification	Average Grade (ppm U ₃ O ₈)	Contained Metal (Mlbs, U ₃ O ₈)	Source
Honeymoon Uranium Mine	Mine	Frome Embayment (Callabonna Sub-basin) South Australia	Boss Energy Limited ASX: BOE	Mineral Resource	660	36	Refer to ASX: BOE announcement dated 23 January 2024
Jasons Uranium Deposit	Resource			Inferred Resource	790	10.7	Refer to ASX: BOE announcement dated 23 January 2024
Goulds Dam Uranium Deposit	Resource			Combined Indicated and Inferred Resource	523	25	Refer to ASX: BOE announcement dated 23 January 2024
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	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
Crocker Well Deposit	Resource	South Australia	Sinosteel Uranium SA Pty Ltd	Combined Indicated and Inferred Resource	281	11.7	Refer to ASX: PNN announcement 28 April 2010

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