

POISED TO BECOME A MID-TIER URANIUM PRODUCER

February 2024



Important Disclosures



This Presentation contains summary information about the current activities of Peninsula Energy Limited (the "Company") as at the date of this Presentation. The information in this Presentation is of a general nature and does not purport to be complete. This Presentation does not purport to contain all the information that an investor should consider when making an investment decision nor does it contain all the information which would be required in a disclosure document or prospectus prepared in accordance with the requirements of the Corporations Act 2001 (Cth). It should be read in conjunction with the Company's other periodic and continuous disclosure announcements lodged with the Australian Securities Exchange, which are available at https://www2.asx.com.au/. To the extent permitted by law, the Company, its representatives, affiliates, related bodies corporate, officers, employees, agents and advisers make no representation or warranty (express or implied) as to the currency, accuracy, reliability, relevance or completeness of the material contained in the Presentation and disclaim all responsibility and liability for the information (including, without limitation, liability for negligence). This Presentation is not intended to form the basis of any investment decision by a prospective investor, but simply to provide an overview to allow prospective investors to decide whether to carry out their own independent investigations and seek their own advice before making a decision whether to invest in the Company. In making an investment decision, investors must rely on their own examination of the Company including the merits and risks involved. Investors should consult with their professional advisers – whether scientific, business, financial, tax or legal.

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The Presentation contains "forward-looking statements". All statements other than those of historical facts included in the Presentation are forward-looking statements including statements regarding the timetable and outcome of the offer, the results of the 2022 Definitive Feasibility Study and 2023 Revised Life of Mine plan, statements regarding the Company's ability to fund its operations, exploration and production targets, estimates of resources, timing of permit and license amendments, timing of uranium production, and rates of uranium extraction and recovery. However, forward-looking statements are subject to risks, uncertainties and other factors, which could cause actual results to differ materially from future results expressed, projected or implied by such forward-looking statements. Such risks include, but are not limited to, uranium price volatility, currency fluctuations, increased production costs and variances in ore grade or recovery rates from those assumed in mining plans, as well as political and operational risks and governmental regulation and judicial outcomes. The Company does not undertake any obligation to release publicly any revisions to any "forward-looking statement" to reflect events or circumstances after the date of the Presentation, or to reflect the occurrence of unanticipated events, except as may be required under applicable laws or regulations (including the ASX Listing Rules). All persons should consider seeking appropriate professional advice in reviewing the Presentation and all other information with respect to the Company and evaluating the business, financial performance and operations of the Company. Neither the provision of the Presentation nor any information contained in the Presentation or subsequently communicated to any person in connection with the Presentation is, or should be taken as, constituting the giving of investment advice to any person.

The Company believes it has a reasonable basis for providing the forward-looking statements and production targets included in this announcement. The material assumptions and JORC disclosures are included in the appendices to the 2022 Definitive Feasibility Study announcement on 15 August 2022 and the 2023 Revised Life of Mine plan announcement on 31 August 2023. The detailed assumptions regarding the JORC resources are outlined in the ASX announcement released on 14 November 2018 and 23 October 2023. Investors outside Australia should note that while ore reserve and mineral resource estimates of the Company in this document 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 United States Securities and Exchange Commission. 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. You should not assume that quantities reported as "resources" will be converted to reserves under the JORC Code or any other reporting regime or that Company will be able to legally and economically extract them.

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Please note that Production Targets within this Presentation are based on a proportion of inferred resources. There is a low level of geological confidence associated with inferred mineral resources and there is no certainty that further exploration work will result in the determination of indicated mineral resource or that the production target itself will be realised.

Disclaimer & Competent Person



This Presentation does not constitute an offer to sell, or a solicitation of an offer to buy, any securities in the United States of America or in any other jurisdiction in which such an offer would be illegal. The securities referred to in this Presentation have not been, and will not be, registered under the U.S. Securities Act of 1933 ("Securities Act") or the securities laws of any state or other jurisdiction of the United States of America and may not be offered or sold, in the United States of America unless the securities have been registered under the Securities Act (which Peninsula has no obligation to do or procure) or are offered and sold in a transaction exempt from, or not subject to, the registration requirements of the Securities Act and any other applicable securities laws.

Non-IFRS financial information

Investors should also be aware that certain financial data included in this Presentation are "non-IFRS financial information" under ASIC Regulatory Guide 230: "Disclosing non-IFRS financial information" published by the Australian Securities and Investments Commission and also "non-GAAP financial measures" under Regulation G of the U.S. Securities Exchange Act of 1934. Non-GAAP financial measures in this Presentation include All in Sustaining Cash Cost, All in Cost and Net Cash Margin. The disclosure of such non-GAAP financial measures in the manner included in the Presentation may not be permissible in a registration statement under the Securities Act. These non-GAAP financial measures do not have a standardized meaning prescribed by Australian Accounting Standards and International Financial Reporting Standards ("IFRS"), and therefore may not be comparable to similarly titled measures presented by other entities and should not be construed as an alternative to other financial measures determined in accordance with Australian Accounting Standards or IFRS. Although the Company believes these non-GAAP financial measures provide useful information to users in measuring the financial performance and condition of its business, investors are cautioned not to place undue reliance on any non-IFRS financial information/non-GAAP financial measures included in this Presentation.

Competent Person Statement

Only the information in this Presentation that specifically relates to Exploration Targets, Exploration Results, Exploration Potential, Mineral Resources or Ore Reserves at the Lance Projects is based on information compiled by Mr Benjamin Schiffer. Mr Schiffer is a Registered Professional Member of the Society of Mining, Metallurgy and Exploration (Member ID #04170811). Mr Schiffer is a professional geologist employed by independent consultant Western Water Consultants, Inc. d/b/a WWC Engineering. Mr Schiffer has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Schiffer consents to the inclusion in the Presentation of the matters based on his information in the form and context in which it appears.

This Presentation was approved by the Board of Peninsula Energy Limited.

Unless stated otherwise, all dollar values are references to US dollar throughout the slide deck

Cautionary & Inferred Resources Notice



The August 2023 Life of Mine plan (LoM) completed for the Ross and Kendrick Production Areas within the Lance Projects includes Measured and Indicated resources, and based on historical experience at Lance, utilizes a resource conversion factor of 60% to convert Ross and Kendrick Area Inferred resources to Indicated or greater quality for use in this revised LoM.

The revised LoM itself is based on various material assumptions as noted in Appendix 1. This includes the homogeneity of the delineated ore body contained within the Lance Projects which is considered reasonable by the Company's technical consultants, competent persons and independent external consultants when preparing the 2022 Definitive Feasibility Study. The Company believes that it has a reasonable basis upon which to prepare and release these revised LoM results, particularly given that the Ross Production Area was first placed into production in December 2015. Whilst the Company considers that all material assumptions underpinning the LoM are based on reasonable grounds, there is no certainty that they will prove to be correct or that the outcomes indicated by the revised LoM will be achieved.

The Company believes it has a reasonable basis for providing the forward-looking statements and production targets included in this announcement. Detailed assumptions regarding the included resources are outlined in the ASX announcement released 14 November 2018 and the Company confirms that there have been no material changes to the determination of the resources since this date. The production target in this announcement is underpinned by measured and indicated resources (comprising 70% of the production target) and inferred resources (comprising 30% of the production target).

Investors should also note that there is no certainty that the Company will be able to raise the amount of funding for the Lance Projects when it is required or on terms that are not overly dilutive or that are favorable to the value of the Company's existing shares.

This announcement has been prepared in accordance with the JORC Code (2012) and the ASX Listing Rules. There is a low level of geological confidence associated with Inferred mineral resources and there is no certainty that further exploration and delineation work will result in the determination of Indicated mineral resources or that the production target itself will be realized. Financial information contained in this announcement is preliminary in nature and is in-part based on low-level technical and economic assessments and is insufficient to support the estimation of reserves or to provide assurance of economic development.

Under the revised LoM plan, the first five (5) years production can be majority sourced from Measured and Indicated Resources. If the Inferred Resources are excluded from the revised LoM, the economic analysis still forecasts a positive financial performance. Therefore, the Company is satisfied that the use of Inferred Resources is not a determining factor in overall Project viability, and it is reasonable to include Inferred Resources in the revised LoM, particularly given that the Lance Projects have previously been an operating entity that produced uranium for almost seven years.

In accordance with the relevant regulations governing the disclosure of mineral projects, readers are cautioned that mineable resources based on Inferred Resource material are considered too speculative geologically to enable them to be classified as reserves.

Given the uncertainties involved, investors should not make any investment decision based solely on the results of the revised LoM.

Rounding

Totals in tables may not add due to rounding.

Company Highlights



(V)

World Class Uranium Production Asset in Tier-1 Jurisdiction



Near Term Yellowcake Producer



Multiple Avenues for Growth



Favourable Market Dynamics



Funded to Production

Experienced Management Team



Experienced in design, construction and operation of Uranium ISR facilities in Wyoming, USA



Wayne Heili Managing Director

Mr Heili has spent the bulk of his 35+-year professional career in the uranium mining industry.

Previous Roles -

- President & CEO of Ur-Energy, Inc. where he successfully oversaw the design, construction, commissioning and ramp-up of the Lost Creek in-situ uranium project in Wyoming USA.
- President of the Uranium Producers of America



Ralph Knode CEO – Strata (Project Co)

Prior to his time with Strata, Mr. Knode served as Senior Vice President for Projects for Uranium One.

Over the past decade, Mr. Knode has held several high-ranking positions with major uranium developers and now brings this extensive experience to the Strata team.



Brian Pile VP – Project Development

>22 years of project experience ranging from development of feasibility studies, engineering, and construction through operational start-up, related to in-situ recovery of uranium in Wyoming, Nebraska, and Kazakhstan.

Mr. Pile's primary responsibility is the evaluation of the learnings from the MU1A field demonstration and Project studies.



Rachel Rees
Executive Director – Finance and Corporate Affairs

>25 years in senior executive roles in multinational listed and unlisted companies.

Previous Roles -

 Vice President for Uranium One Inc. and Executive Director and Chief Financial Officer of its Australian subsidiary



Dave Hofeling CFO – Strata (Project Co)

>20 years' experience. During his 16 years with Rio Tinto, Mr. Hofeling was responsible for financial oversight including global finance, governance, compliance, tax optimization & risk management at numerous domestic and international aluminium, copper, gold and nickel capital and exploration projects. Mr. Hofeling also worked for six years in Nevada gold operations.



Jay Douthit VP - Operations

>22 years in the uranium-specific mining industry. He served as Wellfield Operation Superintendent for Ur-Energy Inc., where he oversaw the wellfield construction and design of the project as well as operational startup and commissioning.

Mr. Douthit also has experience in operations and restorations during his time with Ur-Energy and Cameco Resources.

Corporate Overview



A\$232m

Capitalisation

A\$0.11 Share Price (As of 23 Feb 2024) **2,107m**Shares on Issue (31 Jan 2024)

356.0m Options (1) (31 Jan 2024)

US\$17m Cash (2) (31 Dec 2023)

Nil Term Debt

Board of Directors

Mr John Harrison Non-Executive Chairman

Mr Wayne Heili Managing Director

Ms Rachel Rees Executive Director - Finance & Corporate

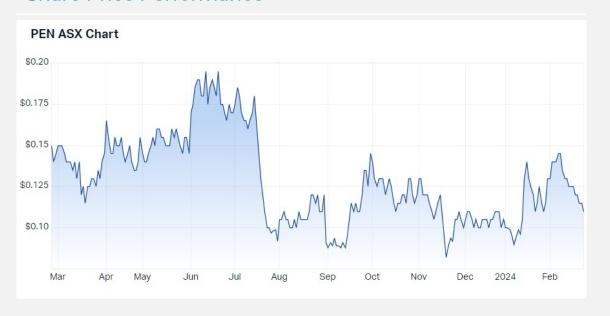
Affairs

Mr Harrison Barker Non-Executive Director

Mr Mark Wheatley Non-Executive Director

Mr Brian Booth Non-Executive Director

Share Price Performance



Notes: (1) Options on issue are 351.9m (strike \$0.10 expiry Mar 25) and 4.1m (strike \$0.30 expiry Nov 27). (2) Cash as at 31 Dec 2023 does not include proceeds from placement and SPP received in Jan 2024.

NOVEMBER 2023 EQUITY RAISING



- A\$50 million placement proceeds (less fees) received 15-Jan-2024
- A\$10 million SPP proceeds received 30-Jan-2024
- This funding allows the Company to continue construction at Lance and maintain schedule for critical path items to restart production in late 2024
- Completed A\$60.0 (US\$39.0¹) million equity raise comprising:
 - A\$50.0 million Institutional Placement² ("Placement") to issue 666.7 million new shares at A\$0.075 per share with 333.4 million attaching options at A\$0.10; and
 - A\$10.0 million Share Purchase Plan ("SPP") to issue 133.3 million new shares together with 66.6 million attaching options on the same terms as the Placement
- Exercise of the Options can provide up to an additional A\$40m

Notes: (1) Assumes AUD/USD of 0.65; (2) Canaccord Genuity (Australia) Limited and Shaw and Partners Limited acted as Joint Lead Managers and Joint Bookrunners. Red Cloud Securities acted as Broker to the Placement. H.C. Wainwright & Co. acted as U.S. financial advisor to the Company and BurnVoir Corporate Finance acted as financial advisor to the Company.

The Lance Projects - Wyoming, USA



Ross Production Project Area

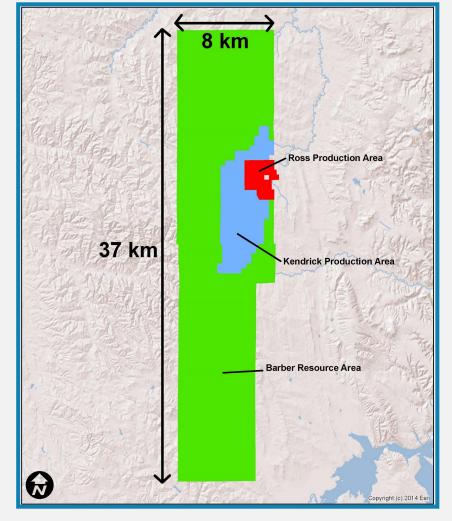
- Fully licensed Uranium ISR production project
- Home of the project facilities and central process plant
- Estimated remaining Resource of 5.9 Mlbs U₃O₈
- 2 previously operated Mine Units (MU-1 and MU-2), with potential for an additional 2-3 Mine Units

Kendrick Development Project Area

- Estimated Resource of 15.9Mlbs U₃O₈
- Next sequential production area
- Amendments to add Kendrick into the Ross production licenses and permits undergoing regulatory review

Barber Exploration Project Area

- Under-delineated resource area
- Holds over 30 Mlbs of predominantly Inferred Resources
- Potential for resource growth through exploration



The Lance Projects

Lance Projects Facility Development



- Plant and wellfield facilities at Ross were constructed in 2015 & operated as alkaline ISR from 2016 through mid-2019
- Recently completed site transition for low-pH ISR
- Current plant capacity of **0.82** Mlbs U3O8 per year loaded on ion exchange resins (requires additional processing)
- Planned plant capacity and capability expansion in 2024 targeting steady-state production of 1.8 Mlbs U3O8 per year of finished dry yellowcake
- Plant expansion construction is now fully funded
- Engineering firm completing detailed design and procurement work for the process plant expansion
- New wellfield development and construction activities accelerating in advance of production restart

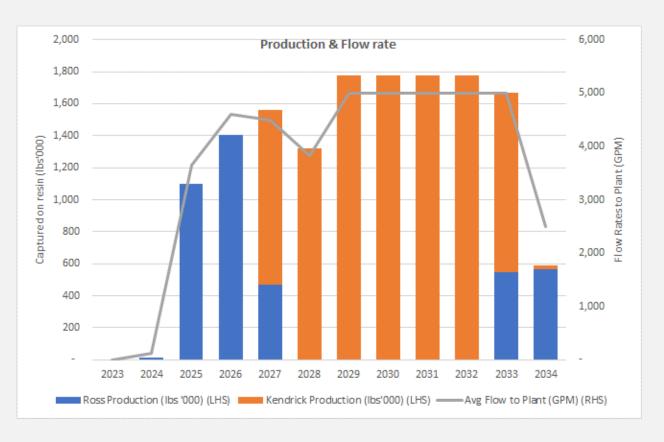




Potential to Become one of the Largest U.S. Uranium Production Projects



- 2.0 Mlb p.a. production plant provides platform for a ramp-up to substantial rates
- Lance production restart target of late 2024
- Steady state production rate of 1.8 Mlbs per annum
- Licensed to produce up to 3.0 Mlbs per annum
- Positive cash flow generated within first year of operations



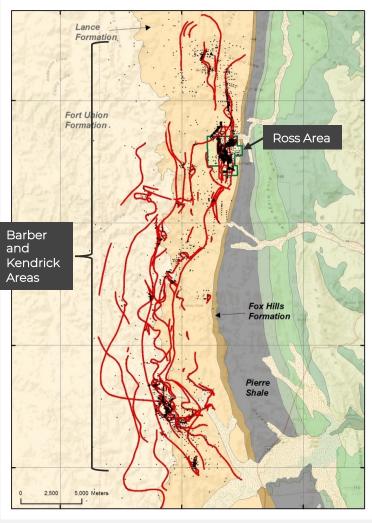
August 2023 Ross and Kendrick LOM Model Production Profile & Plant Flow Rate

Lance Exploration Upside



Peninsula's Exploration Success

- Exploration Target of 104 163 Mlbs eU₃O₈
 - Based on a combination of past exploration results and proposed exploration programmes¹
- Greater than 300 linear km of redox fronts mapped (red)
- Only a limited amount of close-spaced drilling has been conducted in the Kendrick and Barber areas
- Fronts defined by wide spaced drilling are mapped linearly due to insufficient data points
- Wide-spaced drilling can only define Inferred Resources
- The sinuosity and true areal extent of redox fronts can only be understood through closer spaced drilling



Note: (1) Please note that in accordance with Clause 17 of the JORC (2012) Code, the potential quantity and grade of the "Exploration Target" in this presentation must be considered conceptual in nature as there has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource. Refer Appendix 2

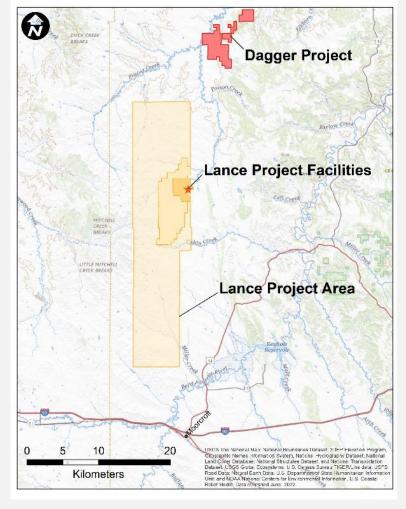
Dagger Project Introduced in 2023



New High Grade Satellite Deposit

- ✓ 6.9Mlbs U₃O₈ of JORC (2012) Inferred Resources¹
- ✓ >2x Grade of U₃O₈, compared to Lance Resource
- ✓ Mineral rights and data set established through in-house efforts for only US\$800K (or US\$0.12/lb U₃O₀)
- ✓ Opportunity to extend Lance project life through Satellite In-Situ Recovery operation

Classification	Tonnes (Mtonnes)	Grade (U³O8 ppm)	U³O8 Metal (Ktonnes)	U³O8 Metal (Mlbs)	
Inferred	3.0	1037	3.1	6.9	
Total	3.0	1037	3.1	6.9	

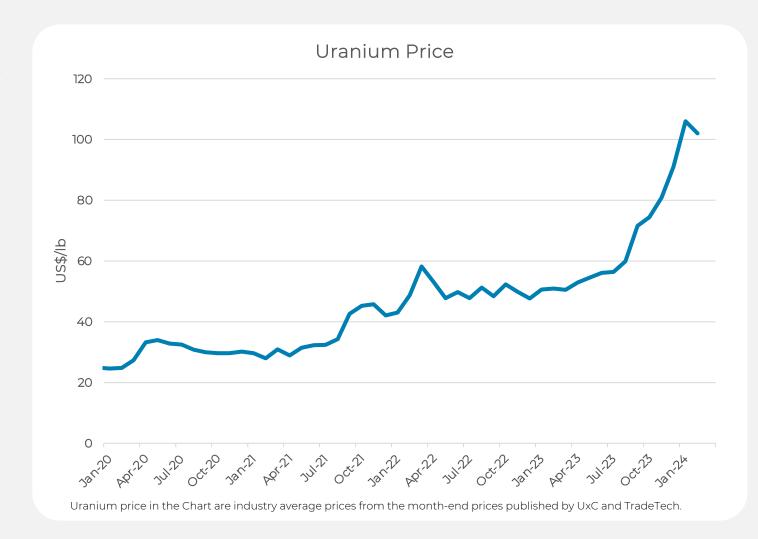


Note: (1) JORC Table 1 included in an announcement to the ASX released on 23 October 2023: "Peninsula Establishes Significant New Uranium Development Project". Peninsula confirms that it is not aware of any new information or data that materially affects the information included in this announcement and that all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

Uranium Price Continues to Strengthen



- Supply/demand imbalance remains
- Robust growth forecasts for uranium demand due to the critical requirement of nuclear energy in meeting global decarbonization targets
- In Feb-2024, the reported uranium spot price reached \$107/lb¹, a post-fukushima high
- Once in operation in late 2024, PEN will be well-placed to benefit from growing demand levels for uranium and strong pricing



Note: (1) Uranium spot price reported by UxC on 15 January 2024.

Strong Leverage to Uranium Price

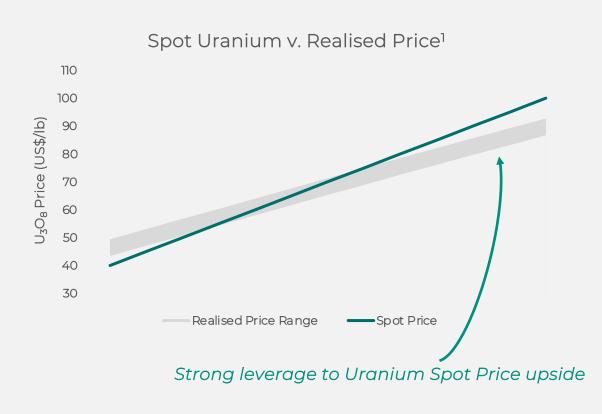


Peninsula's Sales Contract Book

- Future delivery schedule is fully aligned with forecast production
- Contracted sales represent 1/3rd of the projected LoM production from Ross and Kendrick (only)
- Contract portfolio balances base-escalated and market pricing mechanisms providing both downside protection and upside linkage to the uranium spot price

Customer Relationships

- Peninsula has long standing relationships with its customers, built over the past 8 years. Customers remain very supportive of the Lance Project
- Peninsula retains full flexibility to maximize value from the sale of any future production from <u>Barber and Dagger Areas</u>



Note: (1) The chart plots the range of the weighted average realised price (contracted and uncontracted sales) forecast for various Uranium Spot Price assumptions (flat) over the Life of the Project.

Company Milestones for 2024



Initiation of plant expansion construction and subsequent progress reports

Resource Expansion; drilling activities at Lance and Dagger

Wellfield development activity updates for Ross Mine Unit-3 and beyond

Remaining Funding; securing additional funding components

Commencement of Uranium production

Notes: (1) Based on revised LoM Plan Update (See ASX Presentation lodged on 5 September 2023) consistent with 2022 DFS. Base case does not include upside from further exploration and development at Kendrick, Barber areas and Dagger Project. NPV at 8% discount and IRR use real 2023 price. (2) Please refer to Appendix 1.

Independent, Long-Term Uranium Production



Flagship Lance ISR Project

One of the largest US uranium projects, with a JORC (2012) Resource of 53.8Mlbs¹ U₃O₈

Expanded Production Profile

2Mlb per annum capacity, end-to-end production of dry yellowcake, no longer relying on third-party processing

Growing Lance in Size and Scale

Resource growth potential through further exploration and development drilling at Kendrick, Barber and Dagger areas

Early Positive Cash Flow

Sustainable monthly positive cash flow generated in yearone of production (2025)

A Robust Production Plan

Detailed and resilient Life of Mine (LoM) plan developed for Ross and Kendrick production areas, with operations to start in late 2024

Proven Team

Highly experienced uranium technical, development, and operational team

Note: (1) See Appendix 1

Contact Details

REGISTERED OFFICE

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Phone: +61 8 9380 9920

www.pel.net.au

FURTHER INFORMATION

Wayne Heili Managing Director/CEO

email: info@pel.net.au





Appendix 1 – Resources



Lance Proiects R	lesource Estimate a	is at 31 December 2022	1
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Classification	Tonnes (million)	U³O8 (Mkg)	Grade (ppm U³O8)	U3O8 (Mlbs)
Measured	3.5	1.7	489	3.8
Indicated	11.3	5.5	492	12.2
Inferred	36.2	17.2	474	37.8
Total	51.0	24.4	479	53.8

Dagger Resource Estimate as at 23 October 2023¹

Classification	Tonnes (million)	U³O8 (KTonnes)	Grade (ppm U³O8)	U³O8 (MIbs)
Inferred	3.0	3.1	1037	6.9
Total	3.0	3.1	1037	6.9

Note: (1) JORC Table 1 included in an announcement to the ASX released on 14 November 2018: "Revised Lance Projects Resource Tables", updated in the "Annual Report to Shareholders" released on 29 September 2023 and ASX Announcement released on 23 October 2023: "Peninsula Establishes Significant New Uranium Development Project". Peninsula confirms that it is not aware of any new information or data that materially affects the information included in this announcement and that all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

Appendix 2 - Lance Exploration Target Additional Disclosure



Exploration Target¹

The Lance Projects cover a significant proportion of the Powder River Basin. Cretaceous sandstones of Wyoming, which are believed to represent an Exploration Target of between 104 and 163 Mlbs eU₃O₈

Lance Projects Exploration Target (excluding the existing JORC (2012) Code Compliant Resource)

Exploration	Tonnes		Grade		eU ₃ O ₈	
Target	(mill	ion)	(ppm eU_3O_8)		(Mlbs)	
Range	From	То	From	То	From	То
Total	118	145	426	530	104	163

Basis of Exploration Target

Exploration Target is based on a combination of Exploration Results and on proposed exploration programmes.

Exploration Results

Approximately 7,500 drillholes, of which over 2,500 have been drilled and PFN logged since 2009. The data from these holes has been used to determine a JORC (2012) Code compliant resource and to extrapolate between areas of limited drilling but still within the mineralised trends.

Proposed Exploration Programs

The Company has minerals rights to 122.2 square kilometres. This package covers the most prospective mineralised redox/roll front trends that have a cumulative strike length of over 300km. The Company intends to continue exploration over this ground with drilling in order to validate the exploration target and convert to resources.

Note: (1) Please note that in accordance with Clause 17 of the JORC (2012) Code, the potential quantity and grade of the "Exploration Target" in this presentation must be considered conceptual in nature as there has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource.

Appendix 2 - Lance Exploration Target Additional Disclosure



Basis of Grade and Tonnage Range Determination

The level of exploration activity on which the Exploration Target is based is considered to be high due to the combination of a database of approximately 7,500 drillholes and several decades of geological research.

The known Lance resources are located in the upper Lance Formation and in the lower Fox Hills horizons in which roll fronts have been identified over a cumulative length of over 300kms. These horizons have only been partially explored and towards the south (Barber area) the lower unit of the Fox Hills has not been systematically tested. JORC-compliant resources have been estimated in localised areas in which reliable drilling data is available. The zones between the JORC (2012) Code compliant resource areas form the Exploration Target because of the following:

- Continuity of the prospective sandstone established by geological mapping and regional drilling
- · Historic estimates of mineralisation based on drilling which has not yet been validated by Peninsula

The Exploration Target is based on a combination of:

- A tonnage calculation that incorporates the total cumulative prospective strike length of the identified redox fronts multiplied by the average width and thicknesses as determined in the resource estimate
- A grade range representing the lowest resource area grades and highest resource area grades

Proposed Exploration Activities Designed To Test Validity of the Exploration Target

Over the life of mine, ongoing exploration drilling is proposed to expand the JORC (2012) Code compliant resource within the Exploration Target areas. The initial program will be focussed on the Kendrick area. Exploration activities will mostly comprise geophysical logging of additional drillholes.