

ADVANCING THE WORLD-CLASS LANCE URANIUM ISR PROJECT TOWARD PRODUCTION

September 2024



Important Disclosures and Disclaimers

Summary

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. Investors must rely on their own examination of the Company including the merits and risks involved and should consult with their professional advisers.

Forward Looking Statements

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 Presentation. 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 announcements released on 14 November 2018 and 23 October 2023. The Company confirms that there have been no material changes to the determination of the resources since these dates. 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.

This Presentation is for information purposes only and is not a prospectus, disclosure document, product disclosure document, product disclosure statement or other offering document under Australian law or any law (and will not be lodged with the Australian Securities and Investments Commission). This Presentation is not and should be considered an offer to sell or solicitation of an offer to buy securities of the Company, and the securities of the Company may not be offered or sold in any jurisdiction in which their offer or sale would be unlawful.

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 of the 23 October 2023 ASX announcement. 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.

Detailed assumptions regarding the included resources are outlined in the ASX announcement released 14 November 2018 and 23 October 2023 and the Company confirms that there have been no material changes to the determination of the resources since these dates. The production target in this Presentation is underpinned by measured and indicated resources (comprising 70% of the production target) and inferred resources (comprising 30% of the production target).

This Presentation 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.

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 mineralization 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

Company Highlights



The next ASX-listed uranium company set to enter production with a world-class asset in a tier-1 jurisdiction



On-track for resumption of production in late 2024



Strong financial position with current cash balance expected to fund operations at Lance to sustainable free cash flow



Favourable uranium market dynamics, especially for near-term US producers to supply into a constrained market



Scalable assets with multiple growth avenues and development opportunities at Kendrick, Barber and Dagger Projects

A\$280m

Market
Capitalisation
(As of 29 Aug 2024)

A\$0.08

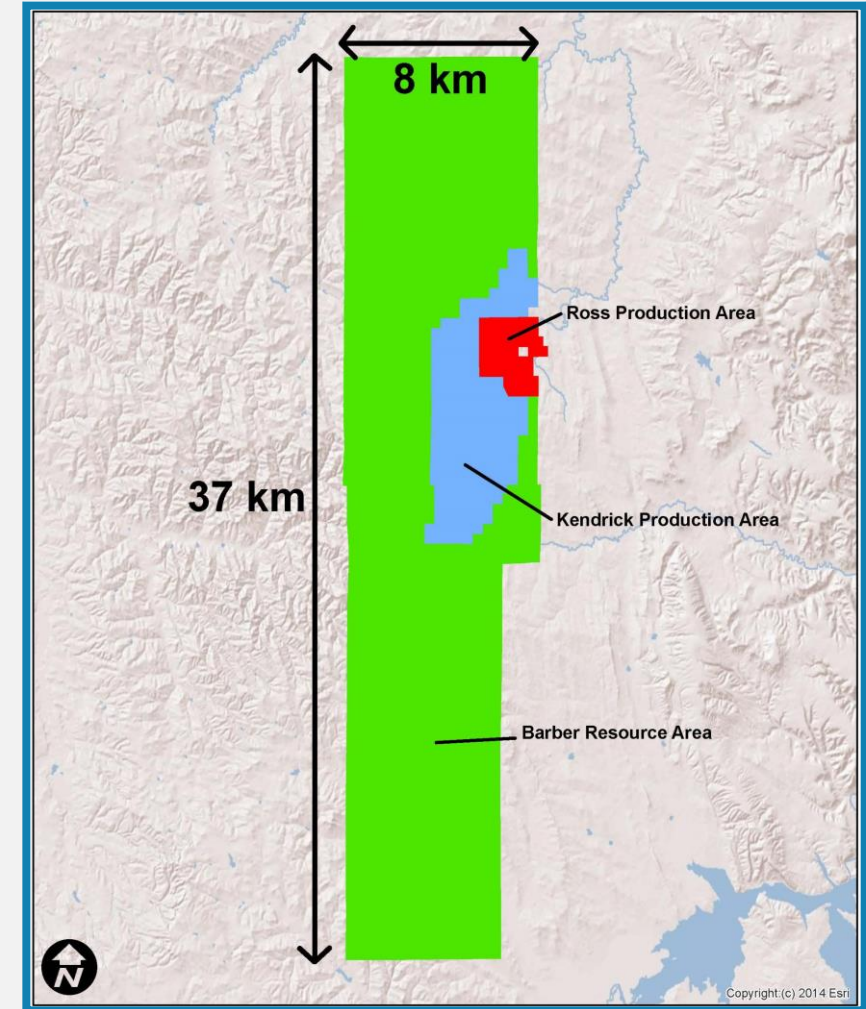
Share Price
(As of 29 Aug 2024)

US\$99.9m

Cash
(30 Jun 2024)

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 6.4 Mlbs U_3O_8
 - 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 19.8 Mlbs U_3O_8
 - 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 ~32 Mlbs of predominantly Inferred Resources
 - Potential for resource growth through exploration



The District Scale Lance Projects

Lance Project JORC Resource

One of the Largest Uranium ISR Projects in the United States

- 58.0Mlbs U₃O₈ of JORC (2012) Resources¹
- Exploration Target of 104 – 163 Mlbs U₃O₈ based on a combination of past exploration results and proposed exploration programmes²
- JORC Resource doesn't account for any future exploration success at Kendrick and Barber
- Peninsula is well-placed to significantly grow Lance in size and scale

Permit Area	Tonnage (Mtonnes)	U ₃ O ₈ Metal (Ktonnes)	Grade (ppm U ₃ O ₈)	U ₃ O ₈ Mlbs
Ross				
Measured	1.5	0.8	510	1.7
Indicated	3.1	1.4	460	3.1
Inferred	1.5	0.7	450	1.5
Total	6.1	2.9	470	6.4
Kendrick				
Measured	1.2	0.6	540	1.4
Indicated	5.4	3.1	580	6.9
Inferred	10.2	5.2	510	11.5
Total	16.8	9.0	530	19.8
Barber				
Measured	0.7	0.3	480	0.7
Indicated	2.5	1.1	430	2.4
Inferred	26.6	13.0	490	28.7
Total	29.8	14.5	480	31.9
Total				
Measured	3.3	1.7	510	3.8
Indicated	11.0	5.6	510	12.4
Inferred	38.3	18.9	490	41.7
Total Lance	52.6	26.3	500	58.0

1) JORC Table 1 included in an announcement to the ASX released on 13 May 2012 "Mineral Resource Increases 19.6% within Current Lance Life of Mine Plan Area". 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.

2) 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 to Appendix 2 for more information on our exploration target.

Lance Project Upgrade Activities (2019-Present)

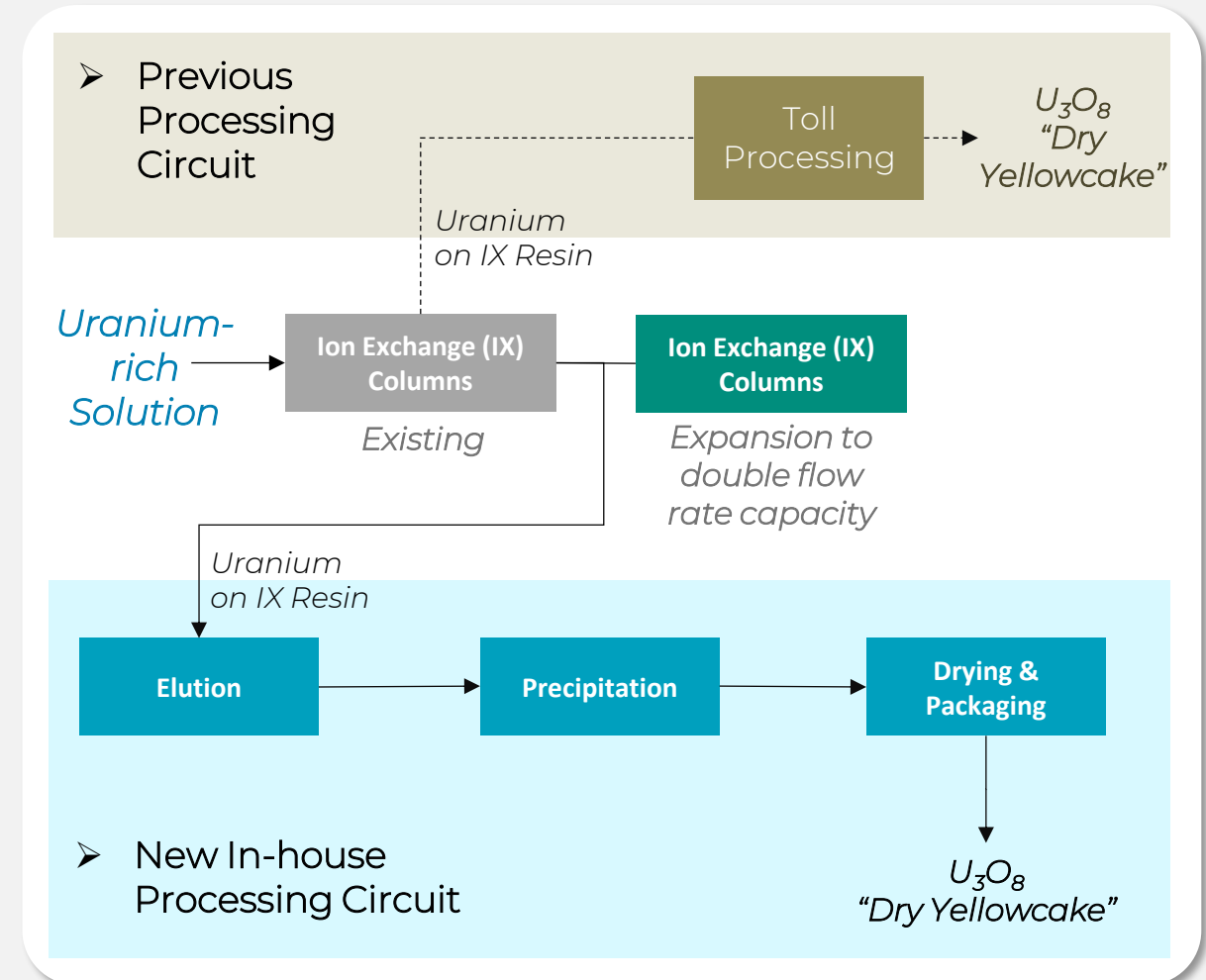
1. Transition to low-pH recovery - Complete

- Low-pH uranium in-situ recovery is the most widely utilized method for uranium production
- The Company completed comprehensive field-scale demonstrations of low-pH ISR in 2020 and 2021, which delivered greater total recoveries and recovery rates over the previously utilized alkaline recovery chemistry
- The Ross satellite plant and wellfield areas have been prepared for operations using low pH ISR

2. Phase II Expansion - Ongoing

- Production capacity expansion from existing 0.8 million lbs per annum, to up to 2 million lbs per annum production capacity¹
- Expand the capability of the process plant from a satellite facility to a fully independent facility producing dry yellowcake

Process Plant Phase II Upgrade



Note: (1) See ASX Announcement Lance Production to Restart in 2024 under Revised LOM Plan. Production of up to 2 million lbs per annum achievable at a flow rate of 5 000 GPM and average production grade of 77 mg/L.

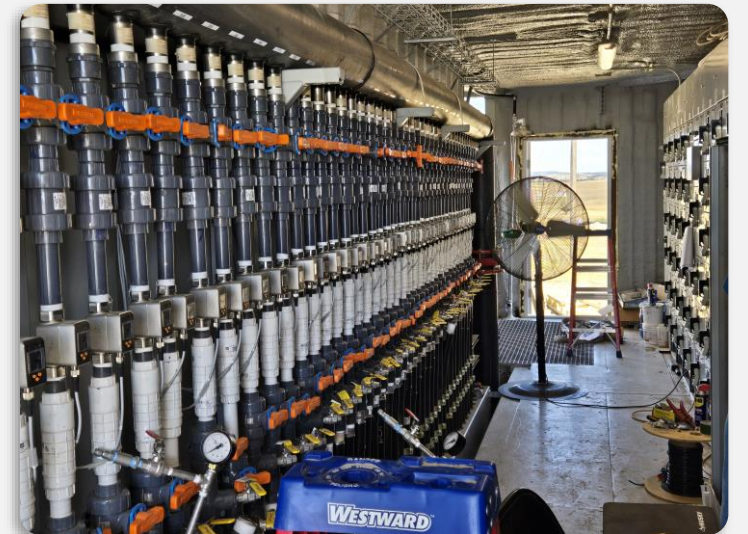
Construction Progress and Wellfield Development

Phase II Plant Expansion Update

- Activities to expand the plant are progressing rapidly with 70 workers reporting on site daily around the clock
- All major process equipment is ordered for on schedule delivery
- Auxiliary facilities designed to improve low-pH ISR operational efficiencies also under construction

Wellfield Development Progress Update

- Mine Units 1 and 2 have been modified for low-pH ISR operations
- Mine Unit 3 (MU-3) is under development and is specifically designed for the low-pH in-situ recovery method
- MU-3 infrastructure and surface facility construction is advancing on schedule
- Construction of MU-3 header house 11 is ~90% complete
- The preparation of header house 11 is on track for operations prior to year-end 2024



Images:
TOP: Nighttime placement of roofing structure

BOTTOM: HH-11 interior under construction in August 2024

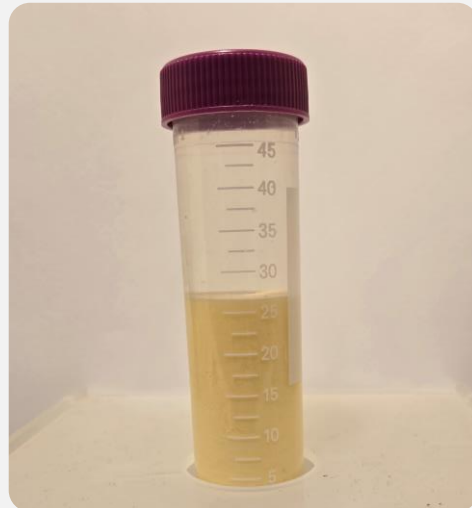
Pre-Production Operational Activities

Wellfield Preconditioning

- Mine Unit 1 preconditioning operations commenced in July
 - Lowering the pH in the wellfield area to prepare for production
- MU-3, HH-11 is anticipated to be ready for preconditioning in Q3 -2024

Process Optimisation Testing

- Laboratory and Pilot scale process demonstrations
- Objectives Include
 - Familiarization with new process unit operations
 - Minimization of process losses
 - Ensure final product quality



Sample of yellowcake obtained from pilot plant testing



Pilot testing equipment at process plant



Ion exchange columns and pipe racks in new section of plant.

Estimated Lance Project Timeline



May 2024

Commencement of Plant Expansion Construction



Q3 2024

Commence MU's 1 & 2 Pre-conditioning



End of 2024

Plant Commissioning/ Low pH-ISR Production Start



Q3 2025

Project Projected to Achieve Sustainable Positive Free Cash Flow



May-Aug 2024

Drilling; MU-3 Development plus MU-4 Resource Delineation



Q3 2024

MU-3, Header House #11 Installation Complete



Q2 2025

First Delivery of Produced Yellowcake



Ready to Deliver into a Robust North American Market

Bolstering the domestic supply chain

- US ban on Russian sourced uranium has unlocked \$2.72 billion of funding in support of domestic nuclear fuel supply
- Acceleration of nuclear technology development and enhanced regulatory efficiency supporting new nuclear deployment

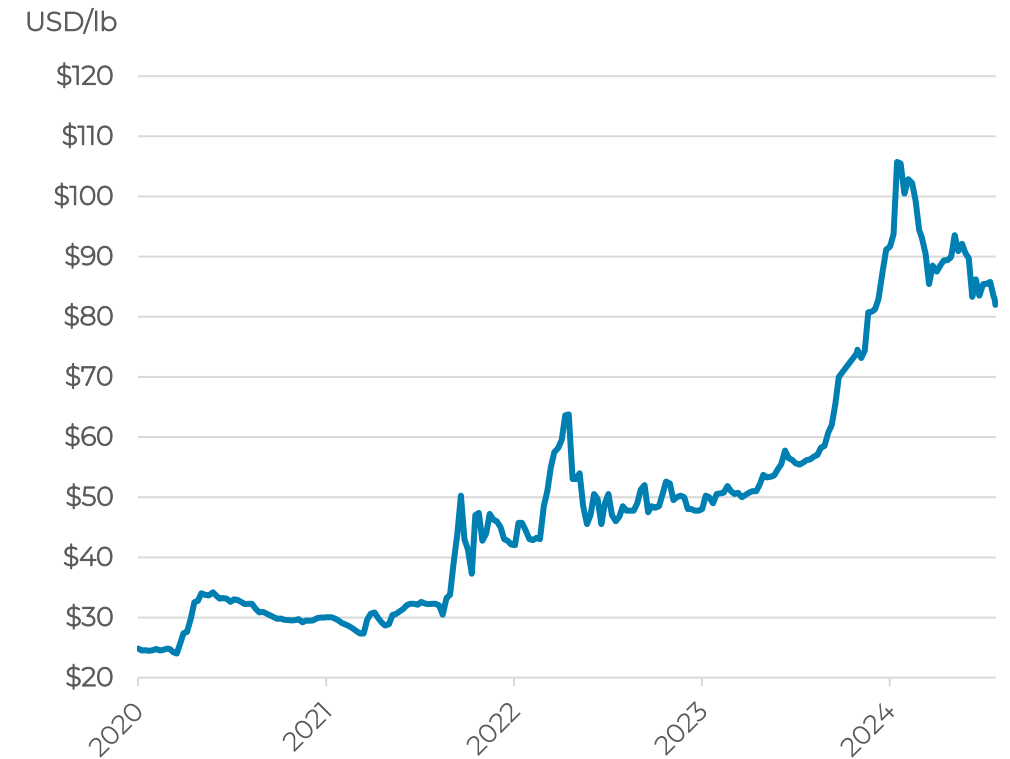
International supply constraints

- Kazatomprom released a substantive 2025 production guidance downgrade while Kazakhstan will increase its mineral extraction tax from 6% to 9% starting in 2025

Positive long-term fundamentals

- The US along with 20 other nations have revealed plans to triple nuclear capacity by 2050 to meet decarbonization targets
- Mid-term and Long-term contract pricing continue firming up while the spot market has been softening

Uranium Price History



Source: Uranium Case Strengthens, Sprott 23 July 2024

Offtake Contracts Sales Profile



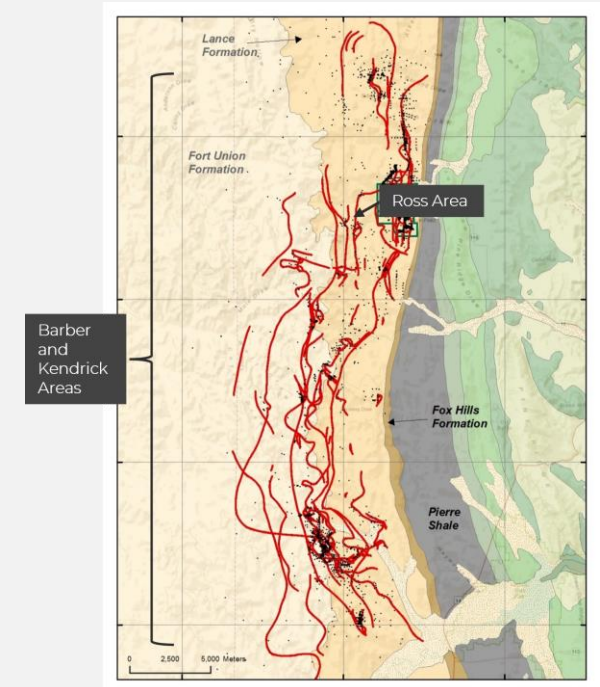
Offtake Contracts

- Peninsula has 6 existing offtake contracts covering ~40% of planned production over next ten years
- Committed to deliver 6.0 Mlbs from 2025 - 2033
- 2025 contracted sales at 467 klbs, well within lower level of production guidance
- Offtake pricing mechanisms include a mix of:
 - fixed base price with escalation; and
 - market linked pricing formulas
- Market linked offtakes provide floor price protection, above AISC
- Peninsula retains full flexibility to maximise value from the sale of any future production from Barber and Dagger

Exploration Upside

Lance Project

- 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 in red)
- Fronts defined by wide spaced drilling are mapped linearly due to insufficient data points
- Wide-spaced drilling can only define Inferred Resources
- Only a limited amount of close-spaced drilling has been conducted in the Barber area
- The sinuosity and true areal extent of redox fronts can only be understood through closer spaced drilling



Peninsula's Exploration Success

Dagger Project

- Opportunity to expand production rate through Satellite In-Situ Recovery operation
- 6.9 Mlbs U3O8 of JORC (2012) Inferred Resources²
- >2x the 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. U3O8)qqaq

Classification	Tonnes (Mtonnes)	Grade (U ₃ O ₈ ppm)	U ₃ O ₈ Metal (Ktonnes)	U ₃ O ₈ Metal (Mlbs)
Inferred	3.0	1037	3.1	6.9
Total	3.0	1037	3.1	6.9

Dagger Mineral Resource Estimate

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 to Appendix 2 for more information about our exploration target.
 Note: (2) 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.

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FURTHER INFORMATION

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Appendix 1 – Resources

Lance Projects Resource Estimate as at 31 December 2023 ¹				
Classification	Tonnes (million)	U ₃ O ₈ (Mkg)	Grade (ppm U ₃ O ₈)	U ₃ O ₈ (Mlbs)
Measured	3.3	1.7	510	3.8
Indicated	11.0	5.6	510	12.4
Inferred	38.3	18.9	490	41.7
Total	52.6	26.3	500	58.0

Dagger Resource Estimate as at 23 October 2023 ²				
Classification	Tonnes (million)	U ₃ O ₈ (KTonnes)	Grade (ppm U ₃ O ₈)	U ₃ O ₈ (Mlbs)
Inferred	3.0	3.1	1037	6.9
Total	3.0	3.1	1037	6.9

Note: (1) Updated Lance Projects Mineral Resource Estimate and JORC Table 1 included in an announcement “Mineral Resource Increases 19.6% within the Lance LOM Plan Area” released to the ASX on 13 May 2024;. (2) ASX Announcement released on 23 October 2023: “Peninsula Establishes Significant New Uranium Development Project”.

Peninsula confirms that it is not aware of any information or data that materially affects the information included in these announcements 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 announcements.

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)²

Exploration Target	Tonnes (million)		Grade (ppm eU ₃ O ₈)		eU ₃ O ₈ (Mlbs)	
	From	To	From	To	From	To
Range	118	145	426	530	104	163
Total						

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.

Note (2): Detailed information with regard to the Exploration Target including the Basis of the Exploration Target, Exploration results underpinning the Exploration Target, Proposed Exploration Programs and Activities designed to test the validity of the Exploration Target and the Basis of the Grade and Tonnage Range is included in Appendix 2 of the Presentation released to ASX on 9 October 2023. Peninsula confirms that it is not aware of any new information or data that materially affects the information included in this Presentation and that all material assumptions and technical parameters underpinning the exploration target 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.