

ADVANCING THE RESTART OF URANIUM PRODUCTION AT LANCE

January 2023



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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.

Past performance information given in this Presentation is given for illustrative purposes only and should not be relied upon as (and is not) an indication of future performance.

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 Definitive Feasibility Study, 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 Definitive Feasibility Study announcement on 15 August 2022. The detailed assumptions regarding the JORC resources are outlined in the ASX announcement released on 14 November 2018.

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.

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

The distribution of this Presentation in jurisdictions outside Australia may be restricted by law and any such restrictions should be observed. In particular, this Presentation may not be distributed or released in the United States. Any failure to comply with such restrictions may constitute a violation of applicable securities laws.

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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

The information in this Presentation that 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.

Cautionary & Inferred Resources Notice

The Definitive Feasibility Study completed for the Lance Projects includes measured and indicated resources and an assumed resource conversion of 61% (inferred to indicated or greater). The purpose of the Definitive Feasibility Study is to demonstrate the economic viability of the Ross and Kendrick production areas within the Lance Projects and the robustness of the planned low pH operations over an extended mine life beyond the existing Ross production area.

The Definitive Feasibility Study itself is based on various assumptions, including homogeneity of the delineated ore body contained within the Lance Projects. See ASX announcement titled “DFS for the Ross and Kendrick Projects at Lance Confirms a Globally Competitive Uranium ISR Operation” dated 15 August 2022 for more information regarding the key assumptions on which the DFS is based and the sensitivity of the DFS outcomes to changes in key assumptions. This is considered reasonable by the Company’s technical consultants, competent persons and independent external consultants. The Company believes that it has a reasonable basis upon which to prepare and release these Definitive Feasibility Study results, particularly given that the Lance Projects operated from December 2015 to July 2019. Whilst the Company considers that all the material assumptions underpinning the Definitive Feasibility Study are based on reasonable grounds, there is no certainty that they will prove to be correct or that the outcomes indicated by the Definitive Feasibility Study will be achieved.

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 favourable to the value of the Company’s existing shares.

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 realised. 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 Definitive Feasibility Study mine plan, the first 5 years production can be sourced almost entirely from Measured and Indicated Resources. If the Inferred Resources are excluded from the Definitive Feasibility Study, 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 that it is reasonable to include Inferred Resources in the Definitive Feasibility Study, particularly given that the Lance Projects were recently operating and produced uranium for over three 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.

PROGRESSING TOWARDS URANIUM PRODUCTION

An Emerging US Uranium Producer

Flagship Lance ISR Project

One of the largest US uranium projects in size and scale, with growth upside

FID

A positive investment decision to restart Lance has been completed and funded

Near Term Production

Start of production activities in Q1 CY2023

Significant Growth Potential

Building the size and scale of Lance through exploration and development at Kendrick and Barber

Well Funded

Cash balance of \$US25.1 million plus uranium inventory consisting of ~510,000 pounds at 31 December 2022

Proven Team

Highly experienced uranium development, technical and operational team

Lance Production to Restart in Q1 CY2023

- Positive Financial Investment Decision (FID) made in Nov 2022 to restart uranium operations
- Current plant capacity of 0.82Mlbs U₃O₈ per year. Licensed to produce up to 3Mlbs U₃O₈ per year
- First uranium production in CY2023 to be delivered into existing offtake contracts in Q4 CY2023
- 53.7 Mlbs U₃O₈ of JORC (2012) Resources¹
- Significant exploration and development growth upside at Barber and Kendrick project areas



Note 1 – see Appendix 1

Corporate Overview

1,257m

Shares on Issue
(27 January 2023)

A\$0.155

Share Price
(27 January 2023)

A\$195m

Market
Capitalisation

Nil

Term Debt

US\$25.1m

Cash
(as of 31 Dec 2022)

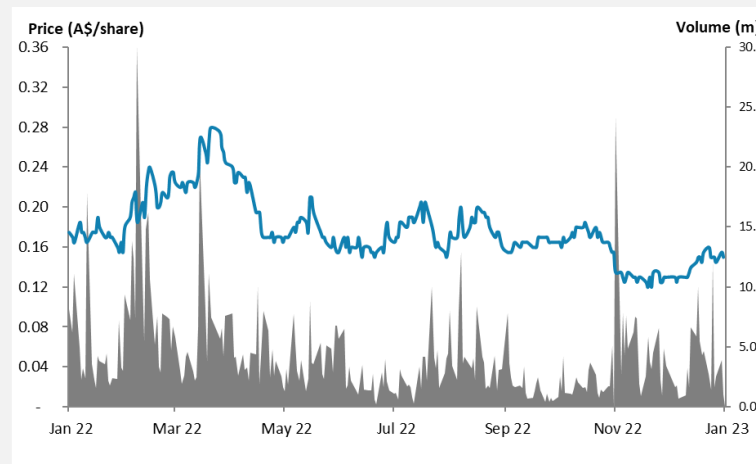
0.5mlbs

U₃O₈ Inventory
(as of 31 Dec 2022)

Board of Directors

Mr John Harrison	Non-Executive Chairman
Mr Wayne Heili	Managing Director
Mr Harrison Barker	Non-Executive Director
Mr Mark Wheatley	Non-Executive Director
Ms Rachel Rees	Non-Executive Director
Mr Brian Booth	Non-Executive Director

Share Price Performance



Management Team

Mr Wayne Heili	Chief Executive Officer
Mr Ron Chamberlain	Chief Financial Officer
Mr Ralph Knode	CEO – Strata
Mr David Hofeling	CFO -Strata
Mr Brian Pile	VP Project Development
Mr Mike Brost	VP Geology
Mr Mike Griffin	VP Regulatory, Env.
Mr Jay Douthit	VP Operations

Uranium, Nuclear and a Clean Energy Future

- **Nuclear power gaining momentum and support globally as a critical part of the green energy mix**
 - Global recognition of the important role nuclear power will play in meeting aggressive de-carbonization targets
 - Nuclear energy provides high capacity-factor, carbon free, baseload electricity
 - Energy security concerns have resulted in greater appreciation of nuclear globally
 - Small Modular Reactor development rapidly advancing
- **Uranium market trending upward**
 - Spot purchases by funds
 - Price has risen 40-50% in one year
- **Supply/Demand imbalance remains**
 - 2021 deficit approximately 35 million pounds
 - Consensus projections for supply deficits to continue beyond the current decade

Uranium & Nuclear Energy in the United States

“Nuclear power provides 52% of America’s clean energy. Because nuclear power plants operate at full capacity more than 92% of the time, it has become our country’s most reliable energy source. This National Clean Energy Week, we are proud to support the advancement of nuclear energy”

“A clear demand signal for domestic production, conversion and enrichment”



BIDEN Administration acknowledges need to transition away from Russian nuclear fuel supply



DOE proposes that Congress fund US\$3.5B for LEU and HALEU procurement



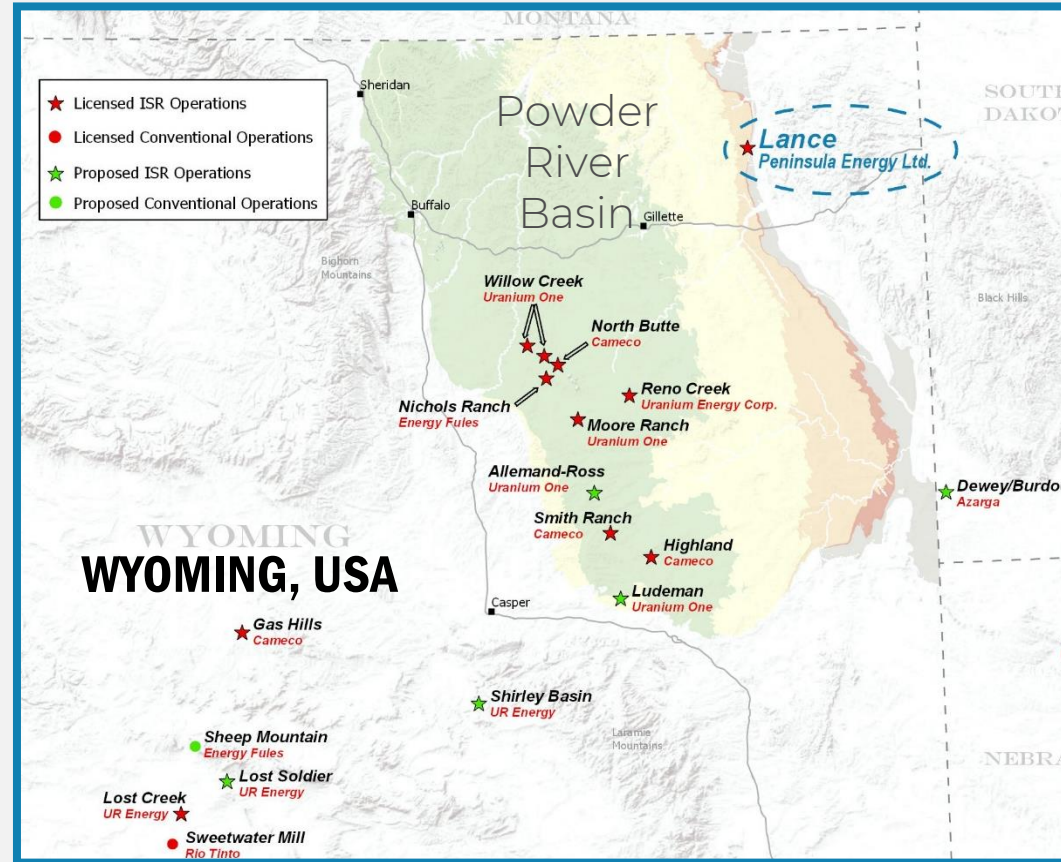
PEN awarded 300,000 pound U3O8 supply contract with the US Department of Energy for US Strategic Uranium Reserve.



Jennifer Granholm
Secretary
U.S. Dept. of Energy
November 4, 2021

THE LANCE URANIUM IN-SITU RECOVERY PROJECT

Lance – A Premier Uranium Project

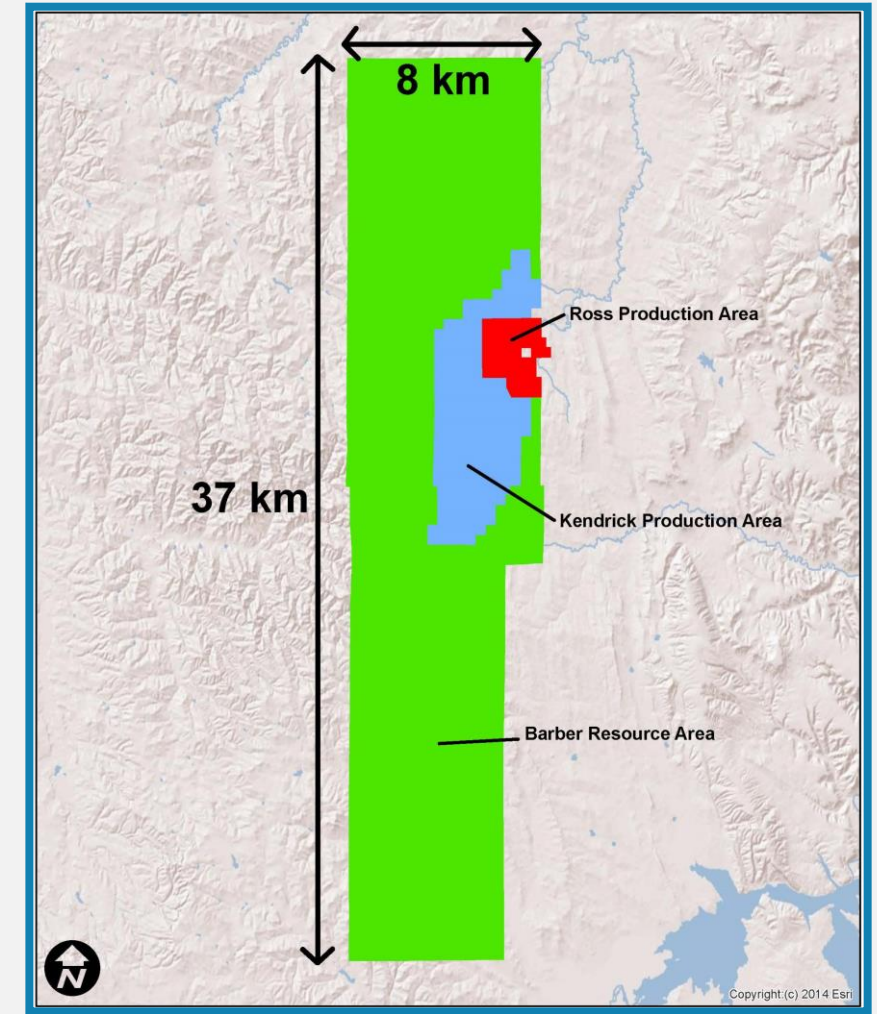


Lance Regional Setting

Located in Wyoming USA, a leading US uranium extraction jurisdiction

The Lance Projects

- **Ross**
 - Fully licensed Uranium ISR production facility
 - 2 developed Mine Units
 - 2-3 additional Mine Units planned
- **Kendrick**
 - The next sequential production area
 - Amendments submitted to add Kendrick to the production licenses and permits
- **Barber**
 - “Under-delineated” resource area
 - Holds significant Inferred Resources
 - Potential for resource growth and enhancement



The Lance Projects

The Lance Projects Resources

"One of the Largest US Uranium ISR Projects Known"

- ✓ A modern, large-scale, long-life, constructed and fully-permitted project
- ✓ 53.7 Mlbs U₃O₈ of JORC (2012) Resources¹
- ✓ Exploration target of 104 – 163 Mlbs U₃O₈ based on a combination of Exploration Results and on proposed exploration programmes²

Lance Projects Resource Estimate as at 31 Dec 2021¹

Classification	Tonnes (million)	U ₃ O ₈ (Mkg)	Grade (ppm U ₃ O ₈)	U ₃ O ₈ (Mlbs)
Measured	3.4	1.7	491	3.7
Indicated	11.1	5.5	496	12.1
Inferred	36.2	17.2	474	37.8
Total	50.7	24.3	480	53.7

1) JORC Table 1 included in an announcement to the ASX released on 14 November 2018: "Revised Lance Projects Resource Tables". 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 Appendix 2.

Applying the Industry Leading Low-pH ISR Process

Low pH ISR is a proven, effective method of uranium production

- Over 60% of global uranium produced in 2021 was via low pH ISR
 - The lowest quartile uranium mines for production costs

Regulatorily De-risked

- Lance is the only US-based uranium project authorised to use the industry leading low-pH ISR method
- Permits received for operational restart of existing facilities

Technically De-risked

- Field Leach Trial, MU1A Field Demonstration and Definitive Feasibility Study (DFS) de-risk the transition to low-pH ISR at Lance

DFS confirms robust project economics

- Ross and Kendrick DFS completed in August 2022 - excellent results delivered

Key Ross and Kendrick DFS Results

“Strong results supported by a quality resource and detailed technical evaluations”

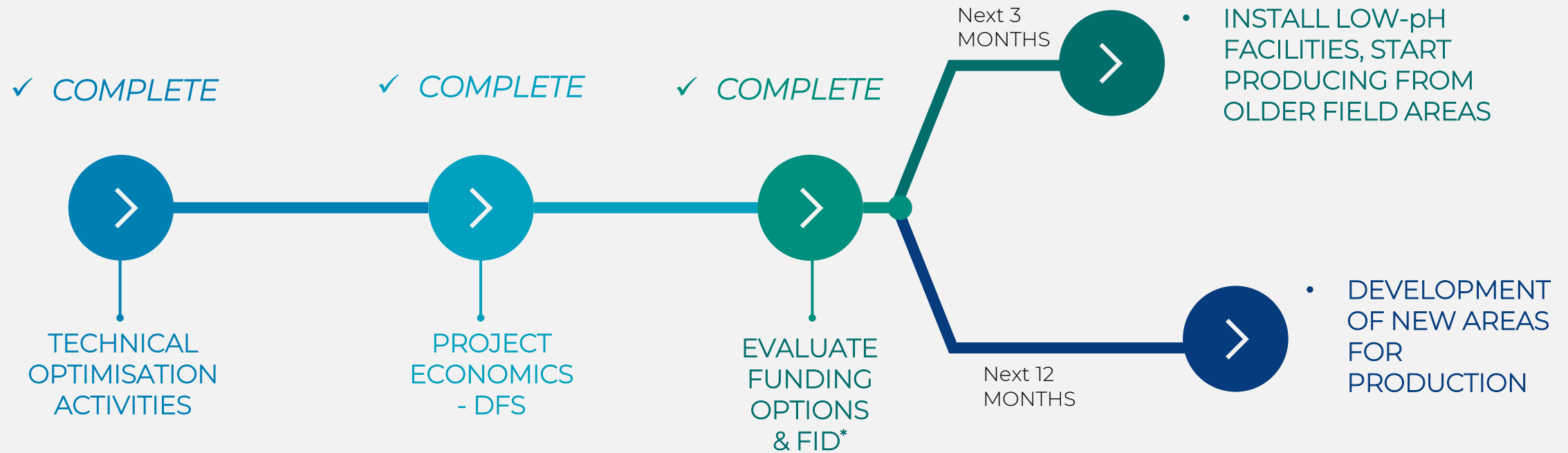
DFS Case: 2-Stage Ramp-up to 2 Mlbs/yr.

- ✓ Includes Ross and Kendrick, but not Barber
- ✓ 14-year Life-of-Mine generating 14.4 Mlb U3O8
- ✓ Pre-tax NPV8 of US\$125 million with IRR of 43%
- ✓ Achieve positive cashflow at end of Year-2
 - ✓ Invest US\$60 million to reach positive CF
 - ✓ Includes part of Stage 2 expansion capital which is to be funded at a future date

ROSS AND KENDRICK DFS RESULTS

Estimated Life of Mine (LoM)	14 years
LoM Project Revenue (real) (US\$ M)	895.2
Average Sales Price Received (US\$/lb)	62.38
Average Price Received for Uncontracted Production (US\$/lb)	65.49
LoM Operating Cashflow (before tax) (US\$ M)	527.1
Investment to Reach Positive Cashflow (US\$ M)	60.0
NPV ₈ (US\$ M) (before tax)	124.8
IRR (%) (before tax)	43%
ASIC - All in Sustaining Cash Cost (US\$/lb)	39.08
AIC - All in Cost (US\$/lb)	45.74

Systematic Progress Leading To Production Restart



* FID = Financial Investment Decision for Low pH implementation and production restart

URANIUM SALES AND INVENTORY

Peninsula's Key Differentiator

"An established uranium sales contract book"

- A junior uranium company with a track record of meeting delivery requirements since 2016
- Sales contracts in place for up to 4.85 Mlbs U₃O₈ extending through 2030
 - With major utilities in both the United States and Europe.
 - 4.25 Mlbs firmly committed sales – pricing mixture of base escalated (projected to be US\$60/lb U₃O₈) and market based (between US\$45/lb and US\$80/lb U₃O₈)
 - 0.6 Mlbs optional at customer election
- CY2023 sales of 0.7 Mlbs U₃O₈ including US-DOE sales

Physical Uranium Inventory

➤ Inventory of 510,000 pounds of uranium concentrate

- Committed inventory of 300,000 pounds for sale to the US-DOE in Q1 CY2023
- Balance of 210,000 pounds uncommitted
- Enhances flexibility in meeting customer requirements
- Holding inventory has delivered considerable value appreciation for shareholders
- Opens the door for on-market transactions
- Working capital option

A COMPELLING URANIUM PROPOSITION

ESG Is In Our DNA

ESG principles have always been core values for Peninsula. The Company is committed to being a responsible member of our local and global communities. We foster a safe, healthy and diverse workplace culture with a strong emphasis on environmental stewardship



- ✓ Business Ethics
- ✓ Community Relations
- ✓ Health & Safety
- ✓ Environmental Protections
- ✓ Corporate Governance

The Next Uranium Producer

- ✓ Lance Projects located in Wyoming, USA - a tier-one mining and uranium jurisdiction
- ✓ Successfully working towards restart of production operations at Lance in Q1 CY2023
- ✓ Lance is a long-life operation, with excellent exploration and development growth upside
- ✓ Well funded through cash, uranium inventory holdings and contracted future sales
- ✓ Led by a well credentialled and respected uranium technical, operational and commercial team
- ✓ Once in operation, Lance has direct access and is well-positioned to supply into the growing and supportive uranium market

The Peninsula Advantage

- Idled US uranium projects that are sufficiently advanced may have a unique opportunity to capture emerging US demand in a Western-focused nuclear fuel market
- Most uranium developers face significant staffing, technical, regulatory, operational and market-related obstacles to achieve production readiness
- **Peninsula** has completed staffing, technical, regulatory and operational de-risking activities and possesses a substantial sales contract book
- **The Lance Uranium ISR Project** is well positioned to confidently restart production in Q1 CY 2023 and at a low capital cost

Contact Details

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FURTHER INFORMATION

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Appendix 1 – Resources

Lance Projects Resource Estimate as at 31 December 2021¹

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Appendix 2 - Lance Exploration Target Additional Disclosure

Exploration Target¹

The Lance Projects cover a significant proportion of the Powder River Basin Basin Cretaceous sandstones of Wyoming, which are believed to represent an Exploration Target of between 104 and 163mlbs U₃O₈

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

Exploration Target	Tonnes (million)		Grade (ppm eU ₃ O ₈)		eU ₃ O ₈ (mlbs)	
	From	To	From	To	From	To
Range						
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.

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, 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.