

DEFINITIVE FEASIBILITY STUDY COMPLETED FOR LANCE

August 2022

PENINSULA ENERGY ASX:PEN; OTCQB:PENMF
INVESTOR PRESENTATION

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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.

Competent Person Statement

The information in this presentation that relates to Exploration Results, 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 Managing Director/CEO

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. 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.

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.

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.

The Peninsula Proposition

“Uranium Extraction for a Green Energy Future”

Strong
Balance
Sheet

Significant cashflow from long-term sales contracts

Proven
Team

Highly experienced team in place for efficient project execution

Detailed
DFS

Up-to-date DFS for Lance with current capital and operating costs

Near-
Term FID

FID expected in H2 CY2022

Long Life
Project

PEN is perfectly positioned to play a larger role in the US nuclear fuel market

✓ DFS Completed in August 2022

✓ Very Low Capital Intensity

✓ Fully Permitted

✓ Resource Upside Potential

Corporate Overview



997m

Shares on issue

A\$0.20

Share Price
(12 August 2022)

A\$204m

Market
Capitalisation

Nil

Term Debt

US\$7.6m

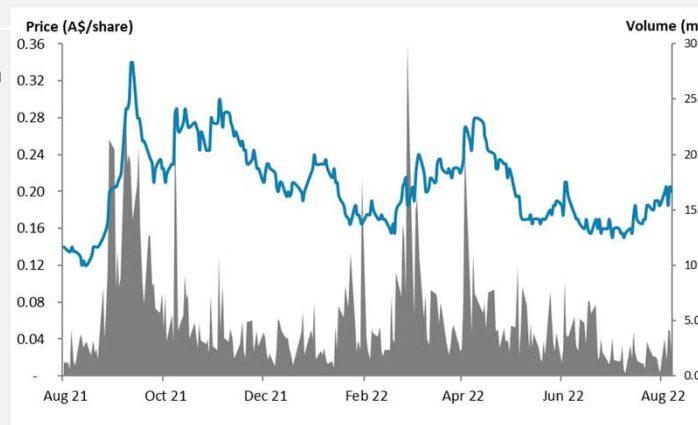
Cash
(as of 30 Jun 2022)

US\$15.6m

U₃O₈ Inventory
(as of 30 Jun 22)
(@ US\$50.50/lb)

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



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	Sr. VP Geology
Mr Mike Griffin	Sr. VP Regulatory, Env.
Mr Jay Douthit	VP Operations

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.

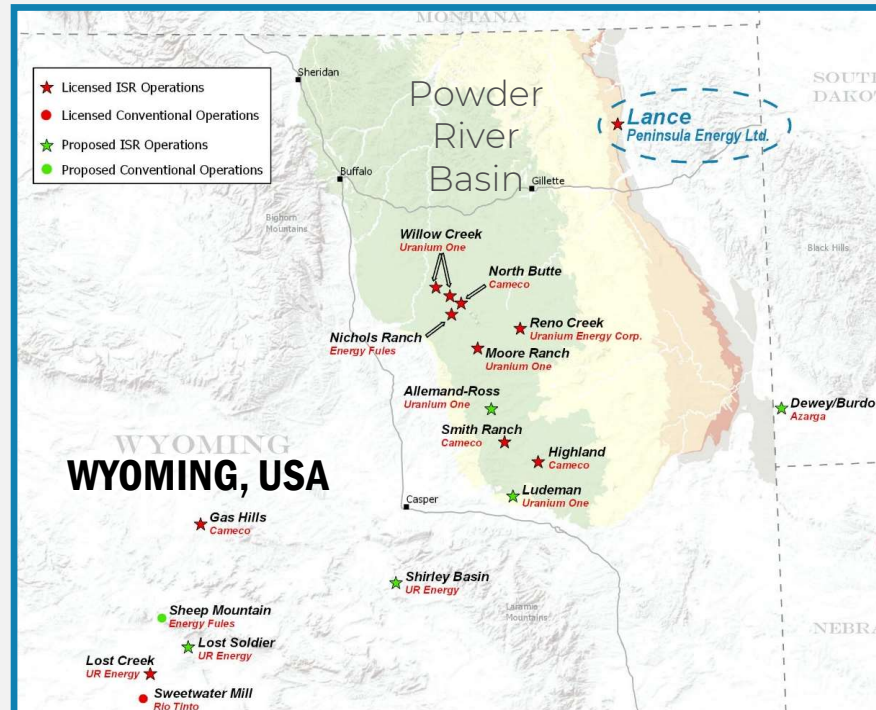


- ✓ Business Ethics
- ✓ Community Relations
- ✓ Health & Safety
- ✓ Environmental Protections
- ✓ Corporate Governance

THE LANCE URANIUM IN-SITU RECOVERY PROJECT

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Lance – A Premier Uranium Production Project

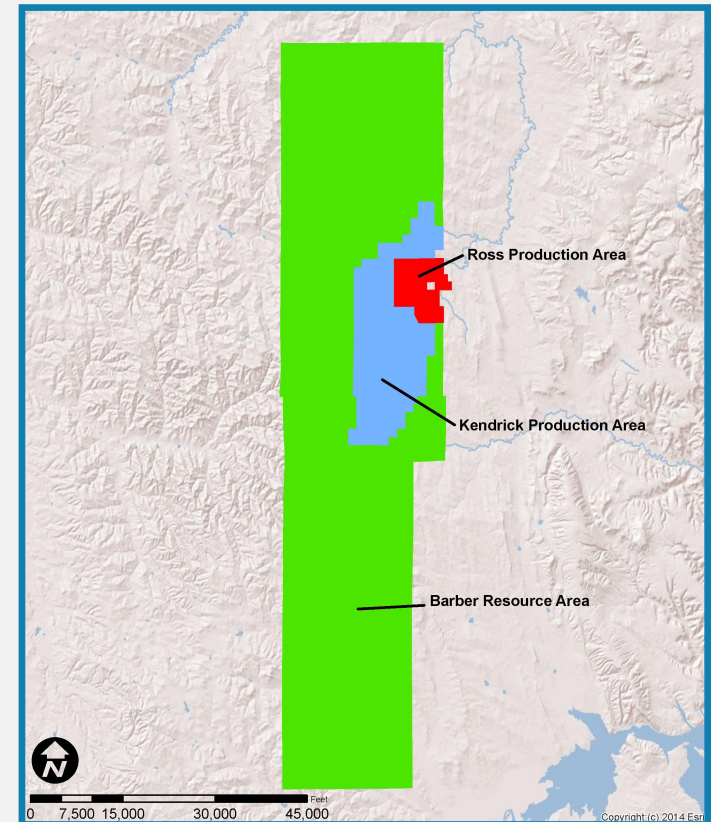


Lance Regional Setting

Located in Wyoming USA, a leading US uranium extraction jurisdiction

The Lance Projects

- 53.7 Mlb of JORC (2012) Resources¹
 - One of the largest US uranium projects
- **Ross** – Fully licensed Uranium ISR production facility
 - Constructed in 2015
 - 2 complete Mine Units with Processing Plant
- **Kendrick** – Adjacent to Ross
 - The next sequential production area
- **Barber** – Holds significant Inferred Resources
 - Potential to upgrade and expand the project resource base



Lance Projects Areas

1) - See Appendix -1

The Ross Project Process Plant

➤ A Modern, Long-Life Uranium ISR Asset

- Licensed to produce up to 3Mlbs U₃O₈ per annum
- Current plant capacity of 0.82Mlbs U₃O₈ per annum



Applying the Industry Leading Low-pH ISR Process

Low pH ISR is a proven method of uranium production

- Over 50% of global uranium produced in 2020 was via low pH ISR
 - All of the lowest quartile cash cost uranium mines

Technically De-risked

- MU1A Field Demonstration and DFS de-risk the transition to low-pH ISR at Lance

Regulatorily De-risked

- Lance is the only US-based uranium project authorised to use the industry leading low-pH ISR method

DFS confirms robust project economics

- DFS completed - excellent results delivered
- Incorporates findings from MU1A Field Demonstration

2022 DEFINITIVE FEASIBILITY STUDY

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Strong DFS Economic Outcomes

➤ Highlights Lance as a Globally Competitive Uranium Production Centre

- Focused on low-risk and well-defined Ross and Kendrick Area Resources
- Conclusions supported by:
 - very low capital intensity
 - low operating costs
 - competitive all-in sustaining costs
 - short timeline to production
 - fully de-risked technical and regulatory regimes
- The Project is well positioned to move towards a re-start decision within current uranium market dynamics

Definitive Feasibility Study Key Results

- Excellent Economic Outcomes Supported by a Quality Resource and Detailed Technical Evaluations
- 14-year Life-of-Mine generating 14.4 Mlb U₃O₈
- Pre-tax NPV₈ of US\$125 M with IRR of 43%
- Achieve positive cashflow at end of Year-2
- US\$60 million invested to reach positive CF
 - Current corporate treasury can be used to fund a portion of this investment
- Project Payback (positive Cum. CF) in Year-4

KEY 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

Capital Efficient Two-Stage Project

- Stage 1 converts facility to low-pH and ramps up production to a sustainable rate of 820,000 lbs./year
- Stage 2 expands the process plant and wellfield capacities to 2 Mlbs/year and constructs the plant processes to make yellowcake onsite

Capital Expenditures	US\$M
Estimated Life of Mine CAPEX	290.6
Low-pH Transition CAPEX	5.7
Stage 1 Up-Front CAPEX	2.7
Stage 1 WF Replacement & Sustaining CAPEX	16.3
Stage 2 Plant Expansion CAPEX	24.1
Stage 2 WF Expansion CAPEX	45.8
Stage 2 WF Replacement & Sustaining CAPEX	196.0
Life of Mine CAPEX (US\$/lb)	20.25

✓ Very Low Stage 1 Capital Intensity

- US\$24.7 million total over 2.5 years

✓ Stage 2 Expansion adds OPEX efficiency

- US\$24.1 million plant facility expansion
- US\$45.8 million to expand WF capacity

Robust Production & OPEX Metrics

➤ Over the Life-of-Mine at Ross and Kendrick, key Production and OPEX metrics:

Production Metrics	Total
Life-of-Mine Production (Mlbs U ₃ O ₈)	14.35
Steady State Production Rate (Mlbs U ₃ O ₈ per annum)	
Stage 1	0.82
Stage 2	2.0
LoM Global Resource Recovery	65.8%

- Total production of 14.4 Mlb U₃O₈
- Stage 1 production through Year 2
- Stage 2 plant expansion completed in Year 2
- Steady state production rate of 2.0 Mlb/yr. over five years commencing in Year 4

Operating Expenditures	US\$M
C1 Direct Operating Cost (excluding Restoration)	234.4
Total OPEX (including Restoration)	283.0
OPEX Unit Cost	US\$/lb
C1 Direct Operating Cost (excluding Restoration)	16.34
Total OPEX (including Restoration)	19.72

- C1 direct production cost (excluding mine restoration and reclamation costs) of US\$16.34/lb.

Key DFS Updates from 2018 Low-pH Feasibility Study

1. Project focused on Ross & Kendrick
 - A targeted resource base with compelling economics
 - Incorporates 40% of the 2018 Resource with 58% of Resources either Measured or Indicated
 - Preserving the larger Barber Resource Area for future exploitation
 - Substantial opportunity for long term resource growth via delineation drilling and future inclusion of Barber
2. DFS adjusted to a Capital efficient 2-Stage project, where 2018 Study was a 3-stage project
 - 2.0 million pounds per annum steady state production in DFS
 - Stage 3 production rate of 3.0 Mlbs/annum was based on production from Barber
 - Removes previously incorporated Stage 3 capital spending
3. Application of Field Demonstration results
 - Updated grade and recovery curves
 - Wellfield pattern design revised to reflect most efficient recovery configuration
 - Use of hydrogen peroxide oxidant (previously excluded)
 - Updated acid consumption to values experienced in Field Demonstration
4. Current uranium market projections incorporated
 - Reducing Western reliance on Russian-backed uranium supplies
5. DFS completed during a time of record high inflation in the US, using conservative inputs

DFS Resources

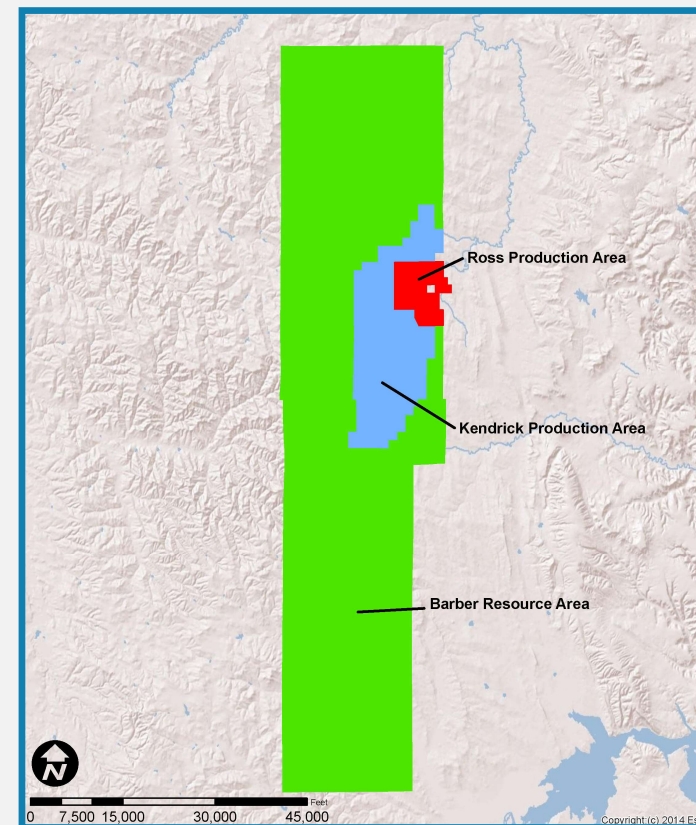
➤ 2022 DFS limited to Ross & Kendrick Production Areas

Project Area	Commence Production	Estimated Resources (lbs U ₃ O ₈) ⁽¹⁾	Estimated Production (lbs U ₃ O ₈) ⁽²⁾
Ross	Year 0	5,882,000	4,104,000
Kendrick	Year 2	15,930,000	10,247,000
DFS Area	Sub-Total	21,812,000	14,351,000
Barber Resource ⁽³⁾	N/A	31,859,000	N/A
Lance Projects	Total	53,672,000	N/A

(1) Refer to Appendix 1 for detailed JORC disclosures.

(2) Overall recovery is estimated at 65.8% of the total estimated resource.

(3) Barber resources are a portion of the Lance Projects, but recovery of these resources is not included in the DFS.



Lance Projects Areas

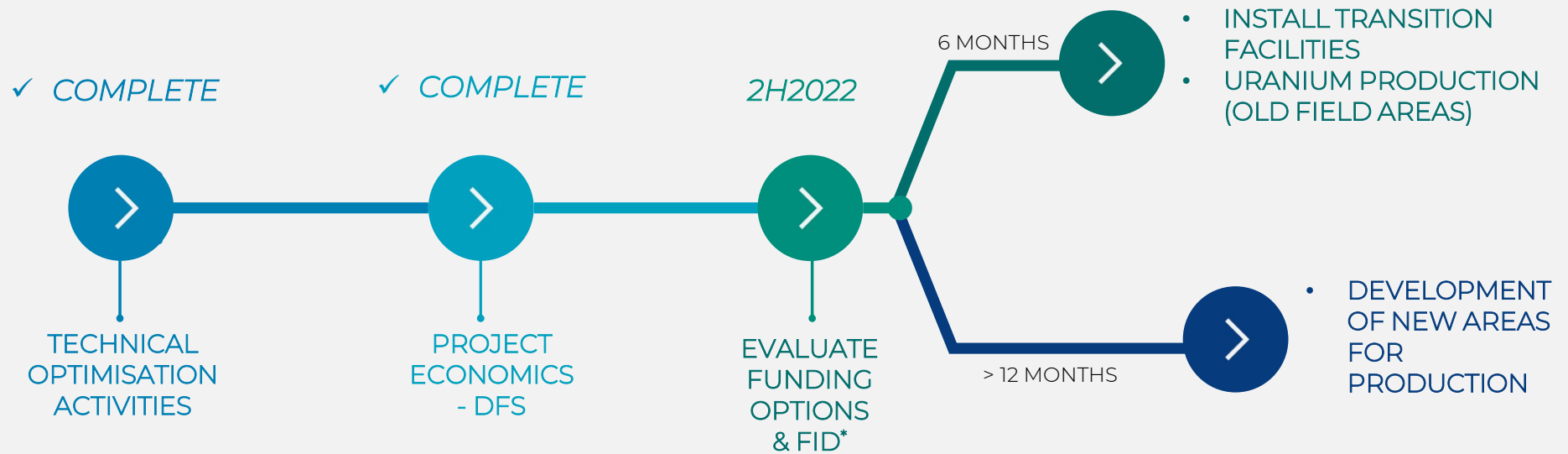
Uranium Market Assumptions

➤ TradeTech was Contracted to Generate the DFS Forward Market Price Model and Report

- Nuclear power gaining momentum and support, as a critical part of the green energy mix
 - Provides high capacity-factor, carbon-free, base-load electricity
 - Small Modular Reactor development rapidly advancing
- Uranium market experiencing volatility but trending upward
 - Spot purchases by funds
 - Price has risen 40-50% in one year
- Supply/Demand imbalance remains
 - 2021 deficit approximately 35 million pounds
- Average un-contracted product sales price in DFS is US\$65.49/lb. (2022 real)
- Average DFS sales price, including existing contracts of US\$62.38/lb. (2022 real)

NEXT STEPS AT LANCE

Systematically Progressing Toward Restart FID



* Final Investment Decision (FID) for Low pH implementation and production restart

- FID based on current uranium market conditions
- FID also based on Definitive Feasibility Study outcomes

Aggressively Advancing Lance

2022 is a pivotal year, with key activities being completed and advanced ahead of FID

1. Definitive Feasibility Study completed

- Impressive results re-affirm Lance as a globally competitive and significant long-life ISR operation

2. Peninsula Team now focused on completing FID in 2H2022

- Decision will be based upon prevailing uranium market conditions and project funding options

3. Ongoing Preparatory Work Program to facilitate an accelerated production ramp-up at Lance

- Funded from cash reserves
- Preparation and operational readiness activities in Mine Units 1 and 2
- Mine Unit 3 drilling activities
- Final engineering and design for low pH ISR process modifications

4. Procurement of long lead-time materials and supplies commenced



SALES, MARKETING AND INVENTORY

Peninsula's Uranium Sales Contract Book

"A Key Differentiator"

- A junior uranium company with a track record of meeting delivery requirements since 2016
- Current contracts in place for up to 4.8 Mlb at US\$56-\$58/lb U₃O₈, with major utilities in both the United States and Europe
 - 3.45 Mlbs firmly committed sales (400-450k lbs/year)
 - 1.35 Mlbs optional at the customers election (CY2024 to 2026)
- CY2022 sales to generate Net Cash Margins of over USD 9.0 million
 - Contractual sales matched to binding fixed-price purchase agreements

Strategic Physical Uranium Inventory

- **Uncommitted physical inventory of 310,000 pounds of uranium concentrate**
 - Enhances flexibility in meeting customer requirements
 - Opens the door for on-market transactions like sales to US Government
- **300,000 pounds of uranium concentrate acquired for US\$31.35 per pound in mid-2021**
 - Delivering considerable value appreciation for shareholders
- **Holding physical uranium is a low-risk strategy that provides key benefits**
 - Strategically aligned with funding requirements to restart Lance as a low pH ISR operation
 - Working capital option

A COMPELLING URANIUM PROPOSITION

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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 and remain years away from achieving actual 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 rapidly move back into production and leverage current uranium market opportunities

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FURTHER INFORMATION

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Appendix 1 – Resources

Lance Projects Resource Estimate as at 31 December 2021¹

Classification	Tonnes (million)	U ₃ O ₈ (kg)	Grade (ppm U ₃ O ₈)	U ₃ O ₈ (lbs)
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.