EXPANDING U.S. URANIUM PRODUCTION CAPACITY

Corporate Presentation │ April 2019
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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 and Metallurgical Results at Peninsula’s Lance Projects is based on information compiled by Mr. Jim Guilinger. Mr. Guilinger is a Member of a Recognised Overseas Professional Organisation included in a list promulgated by the ASX (Member of Mining and Metallurgy Society of America and SME Registered Member of the Society of Mining, Metallurgy and Exploration Inc). Mr. Guilinger is Principal of independent consultants World Industrial Minerals. Mr. Guilinger has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are 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. Guilinger consents to the inclusion in the presentation of the matters based on his information in the form and context in which it appears.
The Feasibility Study completed for the Lance Projects includes measured and indicated resources and an assumed resource conversion of 60% (inferred to indicated or greater). The purpose of the Feasibility Study is to demonstrate the Lance Projects economic viability and the robustness of the planned low pH operations over an extended mine life beyond the existing Ross production area.

The 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 Feasibility Study results, particularly given that the Lance Projects have been in operation since December 2015. Whilst the Company considers that all the material assumptions underpinning the 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 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 are included in Appendix 1 of this announcement and in the JORC table disclosures appended. The detailed assumptions regarding the resources are outlined in the ASX announcement released on 17 September 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 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 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 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 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 Feasibility Study, particularly given that the Lance Projects is an operating project that has been producing 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.
## A Prime Uranium Investment Opportunity

<table>
<thead>
<tr>
<th>Investment Criteria</th>
<th>Peninsula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active US uranium production asset</td>
<td>✔️</td>
</tr>
<tr>
<td>– with major project transformation in progress</td>
<td></td>
</tr>
<tr>
<td>Long term sales contract protection</td>
<td>✔️</td>
</tr>
<tr>
<td>Strong leverage to rising uranium market prices</td>
<td>✔️</td>
</tr>
<tr>
<td>Direct exposure to Section 232 outcomes</td>
<td>✔️</td>
</tr>
<tr>
<td>Ability to rapidly expand production capacity</td>
<td>✔️</td>
</tr>
<tr>
<td>Low current CAPEX requirements</td>
<td>✔️</td>
</tr>
<tr>
<td>Experienced technical, commercial &amp; financial team</td>
<td>✔️</td>
</tr>
<tr>
<td>Attractive valuation when compared to ISR peers</td>
<td>✔️</td>
</tr>
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</table>
Major Current US Producer Market Catalyst

The Section 232 Investigation

- The US Dept of Commerce (DOC) is currently investigating the adverse national security impacts related to excessive importation of uranium.
- The DOC report and recommendations are DUE on 14 April, 2019.
  - The report may be made public upon completion.
- President Trump can act on the report through mid-July (within 90 days of the DOC report submittal).

Strong Case for Pro-active Remedies

- US uranium production down to 830,000 pounds in 2018, 30% below 2017 and the lowest level since 1949.
- US mine production is on track to drop to 382,000 pounds in 2019, which is less than 1 percent of U.S. annual requirements and not enough to power even a single nuclear reactor.
Corporate Overview

Capital Structure

- Shares on issue*: 245m
- Share price (29-Mar-19): A$0.310
- Market capitalisation (29-Mar-19): A$76m
- Enterprise Value (29-Mar-19): A$90m
- Available Cash (31-Dec-18): US$7.5m

Share Price & Volume History

Ticker: ASX:PEN

Shareholding*

- **23.3%**
- **2.5%**
- **2.3%**

Top 20 Shareholders

- **57.0%**

Research Coverage

- Patersons: Cam Hardie
- H.C. Wainwright & Co.: Heiko Ihle
- Roth Capital Partners: Joe Reagor
- BMO Capital Markets: Alex Pearce
- VIII Capital: Dave Talbot

*Undiluted as at 29 March 2019
Investment Upside – Low EV/lb vs Peers

**Imminent share price re-rate events in 2019**

- Completion of low pH Permit amendments
  - First re-rate event occurred with approval of Permit to Mine Amendment
  - Second catalyst pending with Source Materials License Amendment
- News flow from low pH field trials
- US Section 232 decision

**Peer group leading revenue base**

- Investment grade customer base
- Predictable base revenue
- Substantial leverage to uranium price recovery with only 20% of LOM production under contract

40% to 60% discount to US ISR peers
Peninsula Energy’s Strategy

- Develop and operate long-life, low-cost production assets underpinned by long-term product sales contracts

  - Long-term sales contracts provide financial foundation
    - Source of current/ongoing cash revenues

  - Current production from a top-rated uranium jurisdiction
    - Lance Project contains resources of 53.9M lbs of U3O8²

  - Conversion to low pH ISR operations in 2019/2020
    - Set to transform performance and cost profile

  - Building core production capacity for the improving market

- Our Vision: Realising 1st quartile cost basis at our Lance Project
- Wyoming is a “can do” state
Lance – A Premier US Uranium Project

- Wyoming is a leading US uranium extraction jurisdiction, hosting multiple licensed facilities
Lance - Our Flagship Project

Exceptional Asset

• Lance holds the largest defined uranium resource of any currently producing project in the United States
• 53.9M lbs U3O8 JORC (2012) compliant resource base

Home-grown Success

• Peninsula developed the Lance Project from conception to a producing asset
• Spent US$140M over 12 years, with a current EV of US$64M

Scalable Production

• Lance is licensed to produce up to 3M lbs U3O8 per annum – Would be the No.1 producer in the US and Top 10 globally
• Current (Stage-1) plant capacity of 1.15M lbs U3O8 per annum

2 – See Appendix 2
Lance – Maintaining Production Capacity

- Demonstrating cost control while continuing production during low pH transition
  - FY19 production guidance of 90,000 – 110,000 lbs
  - Production significantly cut back to preserve developed well fields for low pH operations
  - Tightly controlled production expenditures

Quarterly Production and Expenditure
Lance Projects Operating History

- Production using alkaline lixiviant commenced Dec-2015
- Uranium recoveries did not meet pre-mining targets

Our Response

- Advanced mineralogy and leach chemistry research
- License amendment requests to allow use of low pH lixiviants
  - Low pH Feasibility Study
  - Low pH Field Demonstration
Unlocking the Full Potential of Lance

- Low pH ISR transformation initiative is being actively advanced

**High Potential**
- Set to transform the performance and cost profile
- Feasibility Study released in September 2018
- Low pH field demonstration operating since December 2018

**Short Timeline**
- Two regulatory approvals required. Final regulator decision expected in mid-CY2019
- Plant and wellfield modifications can be implemented while production from alkaline ISR operations continues

**Low Capital Cost**
- $5.3M CAPEX required for process equipment modifications
- Initial low pH operations will occur in existing wellfields
## Timeline for Low pH ISR Transformation

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Year</th>
<th>Progress</th>
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<tbody>
<tr>
<td>Q3 CY17</td>
<td></td>
<td></td>
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<tr>
<td>Q4 CY17</td>
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</tr>
<tr>
<td>Q1 CY18</td>
<td></td>
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</tr>
<tr>
<td>Q2 CY18</td>
<td></td>
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<tr>
<td>Q3 CY18</td>
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<tr>
<td>Q4 CY18</td>
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<tr>
<td>Q1 CY19</td>
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<tr>
<td>Q3 CY20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q4 CY20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Alkaline ISR Operations**: Complete
- **Ongoing Laboratory Testwork**: Complete
- **Feasibility Study**: Complete
- **Regulatory Approval Process**: Complete
- **Low pH Transition CAPEX**
- **Low pH Field Demonstration**
- **Low pH Operations**

- Permit to Mine amendment **APPROVED**.
- Source Materials License amendment advancing on schedule for mid-2019 outcome.
Low pH Implementation Plan

Phase 1
FLT
- Field Leach Trial demonstration of safe mining capabilities
- Initial field scale groundwater restoration demonstration

Phase 2
Commercial
- Successful completion of Phase 1 allows for progression to Phase 2
- Phase 2 involves commercial recovery operations in previously operated areas including Mine Units 1 and 2 at Ross

Phase 3
FLT
- Continuation of groundwater restoration demonstration in trial area
- Criteria for successful outcomes defined in amended Permit to Mine

Phase 4
Commercial
- Successful completion of Phase 3 allows for progression to Phase 4
- Phase 4 involves commercial recovery in newly developed Mine Units
Lance Low pH Field Demonstration

- Approved by regulators in Nov-2018
- Operations started Dec-2018
- Three production patterns in test area
- Planned 6-month test duration

Sulfuric Acid Addition Pump

Test Pattern Map (in MU-1)
Field Demonstration Status

- The Company has successfully achieved all key technical performance objectives for the Phase 1 mining step of the low pH Implementation Plan
  - pH reduced to commercial operating levels throughout the area
  - Acid injection and consumption metrics consistent with projections
  - Injection and production well flow rates and pressures have been maintained in line with the Low pH Feasibility Study (FS)
  - Observed substantially elevated uranium recovery rates and solutions grades consistent with the FS parameters
  - No environmental or safety concerns have been observed to date
- The Company is preparing to transition the field demonstration operations to the Phase 1 Initial Restoration activities
Lance Low pH FS Summary

**LOM Production**
- 33.4 million lbs $U_3O_8$
- 17 year minelife

**Financial Metrics**
- LOM AISC of US$31.77/lb
- NPV8 US$157M at US$49/lb

### Three Stage Expansion Plan

<table>
<thead>
<tr>
<th>Stage</th>
<th>Year</th>
<th>Capacity Mlbs/yr</th>
<th>Expansion CAPEX</th>
<th>Production Cost $/lb.</th>
<th>AISC $/lb.</th>
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<tr>
<td>Stage 1</td>
<td>2019</td>
<td>1.15</td>
<td>$5.3M</td>
<td>$14.67</td>
<td>$40.58</td>
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<td>Stage 2</td>
<td>2024</td>
<td>2.3</td>
<td>$43.1M</td>
<td>$8.93</td>
<td>$31.52</td>
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<td>Stage 3</td>
<td>2026</td>
<td>3.0</td>
<td>$70.3M</td>
<td>$9.16</td>
<td>$30.36</td>
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</table>

**Very low conversion CAPEX of only US$5.3M**

Note: 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.
FS Outcomes – LOM CAPEX Profile

- Transition US$5.3M
- Stage 2 exp. 2023/24
- Stage 3 exp. 2025/26
- Tight +/- 5 to 10% range of CAPEX accuracy
- Includes average contingency of 5.8%

**FS CAPEX cost estimates maintain elements of conservatism**

**Opportunities to reduce LOM wellfield development costs identified**
FS Outcomes: All-in Sustaining Cash Costs for LOM and by Stage

<table>
<thead>
<tr>
<th>LOM Avg</th>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production Cost, 10.11</td>
<td>Wellfield CAPEX, 13.36</td>
<td>Production Cost, 8.93</td>
<td>Wellfield CAPEX, 10.52</td>
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<tr>
<td>Royalties, 5.93</td>
<td>Royalties, 5.73</td>
<td>Royalties, 5.73</td>
<td>Royalties, 5.94</td>
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<tr>
<td>R&amp;R, 2.80</td>
<td>R&amp;R, 3.06</td>
<td>R&amp;R, 2.36</td>
<td>R&amp;R, 2.50</td>
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<tr>
<td>31.77</td>
<td>40.58</td>
<td>31.52</td>
<td>30.36</td>
</tr>
</tbody>
</table>

- Comparative basis to Kazakhstan type low pH ISR (ie, exclude royalties & local taxes, rest. & rehab, disposal wells for rest. & rehab and permitting/regulatory costs)
  - Stage 1: $28.87/lb U₃O₈; Stage 2: $21.03/lb U₃O₈; Stage 3: $19.60/lb U₃O₈

Note: All-in sustaining cash costs exclude CAPEX for low pH transition, Stage 2 expansion and Stage 3 expansion and are calculated as at the steady state production rate for each respective stage.
Lance Feasibility Study Take-Away Points

Technical Basis
- Over 12 months of comprehensive laboratory testing
- Almost 50% of global uranium mined using this method

LOM Production
- 17 year mine life
- 33.4 million lbs U3O8 production potential
- Over 12 months of comprehensive laboratory testing
- Almost 50% of global uranium mined using this method

Leveraged to U₃O₈ price
- US$10/lb increase in U₃O₈ price assumption for uncontracted production increases NPV8 by almost US$100m

Regulatory Pathway
- Substantial progress completed in CY18
- Clear pathway ahead

Cost Competitive
- $31.77 / lb U₃O₈ LOM all-in sustaining cash cost
- $34.00 / lb U₃O₈ break-even price for uncontracted production

Existing Contracts
- 20% of LOM production already under contract
- Contracted revenue stream to assist financing activities
Uranium Market Overview

- The long-term market was in a “wait and see” mode during early 2019

- The spread between the spot & term markets is at historically thin levels
- Spot market up >30% since April-2018
- Spot market volumes at record highs
- Term market volumes correspondingly suppressed
- Both markets current prices are still well below average production costs

Source: UxC, LLC
Both Supply & Demand Factors Favour Higher Uranium Prices in 2019

Supply: Global supply restraint

- The producers keep reducing production target levels – now off 20% or 30M lbs U3O8/yr
- Available inventory stockpiles are decreasing

Demand: Strong demand is driving the market price up

- Primary producers are buying big spot volumes; Cameco purchasing 18-21M lbs U3O8 in CY19
- New investment funds are buying and holding physical uranium inventories
- Forecasts continue to show primary/utility demand growth well beyond 2030

Lance is leveraged to rising prices

Source: TradeTech
- Excludes Langer Heinrich C&M announced by Paladin on 25 May 2018
Uranium Sales Portfolio
Long-Term Contract Portfolio

• Five sales agreements with a globally diverse customer base
  • Weighted sales price between US$51-53/lb U₃O₈
  • Contract portfolio carries through year 2030

• Up to 6.3 million pounds U₃O₈ remaining under contract
  • 4.4 million pounds U₃O₈ committed deliveries
  • Up to 1.9 million pounds U₃O₈ optional at customer election between 2021 and 2026

• Material origin clauses allow blending production with purchased U₃O₈
  • Contracted to purchase 225,000 lbs U3O8 as needed in 2019/20 at fixed purchase prices averaging US$23.69/lb U3O8

• Sales portfolio represents ~20% of projected Lance LOM production
• Near and mid-term sales contracts underpin Peninsula’s business
• CY2018 completed deliveries of 225,000 lbs of U3O8

5-Year Sales Profile (*)

(*) Committed deliveries only and excludes optional delivery quantities that customers may elect from 2021 onwards.
Conclusion

“Peninsula (ASX:PEN) will be one of the most exciting uranium production companies to follow in 2019.”

Wayne Heili – CEO
Next Steps for Peninsula

Amendment Progression
- Permit to Mine amendment granted
- Source Material License amendment review advancing

Testing & Planning
- Continue low pH mining and restoration field demonstration
- Maintain alkaline based mining at reduced rates

Mine Unit 3 Funding
- Investment in Mine Unit 3 wellfields planned for H2 CY2019
- MU3 sustaining development CAPEX cost ~US$9M
- Funding options being considered

Customer Base
- Continue to engage with our existing & potential new customers
- Seek opportunities for new long term contracts at acceptable prices
Peninsula Energy Take-Away Points

- Peninsula is positioned to benefit from ongoing corporate initiatives and current market trends, including Sec.232 outcomes
  - Lance has the largest defined US uranium resource currently in production
  - Low pH transition expected to transform production & cost base
  - Total sales of up to 6.3M lbs sales at weighted price between US$51-53/lb $U_3O_8$
  - Robust cash position with peer group leading revenue base
  - Low EV/lb resource compared to peer group with substantial share price re-rating events forecast throughout 2019
Contact Details

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FURTHER INFORMATION
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David Coyne  Finance Director / CFO +61 8 9380 9920
Appendix 1 - Board and Management

Board

John Harrison, Non-Executive Chairman  
Wayne Heili, Managing Director & CEO  
David Coyne, Finance Director & CFO  
Harrison Barker, Non-Executive Director  
Mark Wheatley, Non-Executive Director

Capital Markets  
Exec. Leadership & Technical  
Finance & Risk Management  
Nuclear Fuel Markets  
Mining CEO & ISR Technical

Management Team

Ralph Knode  
David Hofeling  
Mike Brost  
Jay Douthit  
Mike Griffin  
CEO USA  
CFO USA  
VP Geology USA  
VP Operations USA  
VP Permitting, Regulatory & Environment USA
Lance Projects Resource Estimate as at 31 December 2017

<table>
<thead>
<tr>
<th>Classification</th>
<th>Tonnes (million)</th>
<th>U3O8(kg)</th>
<th>Grade (ppm U3O8)</th>
<th>U3O8(lbs)</th>
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<tbody>
<tr>
<td>Measured</td>
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<td>1.8</td>
<td>488</td>
<td>3.9</td>
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<tr>
<td>Indicated</td>
<td>10.9</td>
<td>5.4</td>
<td>495</td>
<td>11.9</td>
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<tr>
<td>Inferred</td>
<td>36.3</td>
<td>17.3</td>
<td>476</td>
<td>38.1</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>51.0</strong></td>
<td><strong>24.5</strong></td>
<td><strong>479</strong></td>
<td><strong>53.9</strong></td>
</tr>
</tbody>
</table>

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.