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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.

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 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 information in this presentation that relates to Exploration Results, Mineral Resources or Ore Reserves at Peninsula’s Karoo projects is based on information compiled by Mr. George van der Walt. Mr van der Walt is a Member of the South African Council for Natural Scientific Professions (SACNASP). Mr van der Walt is a Geological Consultant and Director of Geoconsult International (Pty) Ltd. Mr van der Walt 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 Competent Persons as defined in the 2012 Edition of the ‘Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves’. Mr. van der Walt consents to the inclusion in the presentation of the matters based on his information in the form and context in which it appears.
Peninsula Energy’s Defining Strengths

- Experienced technical, financial and commercial team
- Generating improving quarter over quarter results

- Long-life Lance Project in USA advanced to production stage
- The Lance Project contains resources of 53.5 mlbs of U3O8¹

- Lance is licensed to produce up to 3m pounds per annum
- ‘Game Changing’ low pH lixiviant initiative

- Strong cash position with reliable income generation
- Spending discipline

- Long-Term Sales contracts underpin Peninsula’s business
- Average uranium sales price US$51-53 per pound until 2030

¹Note: The exact quantity of U3O8 is 53.5 million pounds.
Board and Management Team

Board

John Harrison, Non-Executive Chairman, Capital Markets
Wayne Heili, Managing Director & CEO, Exec. Leadership & Technical
David Coyne, Finance Director & CFO, Finance & Risk Management
Harrison (Hink) Barker, Non-Executive Director, Nuclear Fuel Markets
Evgenij Iorich, Non-Executive Director, Buy Side Capital Markets
Mark Wheatley, Non-Executive Director, Mining CEO & ISR Technical

World Class Management

Ralph Knode, CEO USA
David Hofeling, CFO USA
Mike Brost, VP Geology USA
Jay Douthit, VP Operations USA
Mike Griffin, VP Permitting, Regulatory & Environment USA
Willie Bezuidenhout, CEO South Africa
Corporate Overview

Capital Structure

- Shares on issue*: 232m
- Share price (31-Jan-18): $0.410
- Market capitalisation (31-Jan-18): A$95m
- Enterprise Value: A$112m
- Cash and Security Deposits (31-Dec-17) (excludes US$19 million due in Feb-18): US$7.3m

Shareholding*

- Peninsula Limited: 22.0%
- Global X: 12.1%
- PALA: 9.7%
- BlackRock: 5.9%
- AREVA: 2.5%

Top 20 Shareholders: 61.9%

*Undiluted as at 31 January 2018

Research Coverage

- BMO Capital Markets: Alex Pearce
- Numis: Justin Chan
- VIII Capital: Dave Talbot
- H.C. Wainwright & Co.: Heiko Ihle
- Roth Capital Partners: Joe Reagor

Share Price & Volume History

Ticker: ASX:PEN

Share Price (A$/share) and Volume (m) from Jan 17 to Jan 18.
Peer Comparison

**Contracted Volume**

- Peninsula Energy: 51-53 lbs U3O8
- Ur Energy: 50 lbs U3O8
- Berkeley Energia: 41 lbs U3O8
- Energy Fuels: 2000 lbs U3O8
- Toro Energy: 4000 lbs U3O8
- Vimy Resources: 6000 lbs U3O8
- Boss Resources: 8000 lbs U3O8
- UEC: 10000 lbs U3O8

**Resource Base**

- Energy Fuels: 120 m lbs
- Peninsula Energy: 100 m lbs
- Vimy Resources: 80 m lbs
- Berkeley Energia: 60 m lbs
- Toro Energy: 40 m lbs
- Boss Resources: 20 m lbs
- Ur Energy: 10 m lbs

**Market Capitalisation**

- UEC: 300 US$m
- Berkeley Energia: 250 US$m
- Energy Fuels: 200 US$m
- Ur Energy: 150 US$m
- Peninsula Energy: 100 US$m
- Toro Energy: 50 US$m
- Vimy Resources: 25 US$m
- Boss Resources: 10 US$m

**Market Cap / Resource Base**

- Ur Energy: 3.5 US$ per lb
- Berkeley Energia: 3.0 US$ per lb
- Energy Fuels: 2.5 US$ per lb
- Toro Energy: 2.0 US$ per lb
- Boss Resources: 1.5 US$ per lb
- Peninsula Energy: 1.0 US$ per lb
- Vimy Resources: 0.5 US$ per lb

Note: Market capitalisations are as at 18 January 2018.
Strategy – Unlocking the Value

- Develop and operate long-life, low-cost production assets underpinned by long-term product sales contracts
  - Valuable long term sales contracts provide financial foundation
    - Source of current cash revenues
  - Optimize current alkaline ISR production operations at Lance
  - Convert to low pH ISR operations in 2019/2020
  - Continue research and submit license amendments in 2018
  - Divest Karoo projects
  - Evaluate synergistic growth opportunities

- 2020 Vision: Peninsula capitalising on uranium market rebound with 1st quartile cost base at Lance ISR Project
The Uranium Market

Source: Trade Tech
Uranium Market Overview

- **Uranium Market Insight**
  - Market is currently oversupplied
  - Production restraint is occurring
  - Term price has been flat
  - Future utility demand projections remain positive

- **Market rebalancing is occurring now**

Source: The Ux Consulting Company, LLC
Uranium Market Themes

1. Supply: Production restraint has become a common theme
   • The big miners continue reducing production target levels
     • Cameco suspended production at world’s largest uranium mine (~14m lbs p.a.)
     • “Optimization” and “cost reduction” efforts are prevalent industry-wide
   • Even the large state-owned corporations are effected
     • Kazatomprom announced further target production reduction for 2018
     • Kazakhstan changing its sales and marketing strategy through the establishment of THK

2. Demand: The need for carbon-free nuclear power remains strong
   • Demand forecasts continue to show growth through and beyond 2030
   • Over 800 million lbs U₃O₈ of uncovered demand over the next 10 years

3. US Produced uranium could soon trade at a premium
   • Unfair Trade petition filed with US Department of Commerce
Demand Trends

- Utilities have been avoiding the term market since 2012

Term and Spot Market Contract Volumes

A large number of last decade’s term contracts are now rolling off
Uranium Sales & Marketing
Substantial Long Term Sales Contracts

- Long term sales contracts underpin Peninsula’s business
- CY2018 forecast deliveries of 225,000 lbs of U3O8
  - Additional $19M cash revenue in CY2018 from contract transactions

5-Year Sales Profile (1)

(1) Committed deliveries only and excludes optional delivery quantities that customers may elect from 2021 onwards.
Flexible Sales Strategy

- CY2017 deliveries completed at an average cash price of US$54/lb
- Spot Price in 2017 held between US$19/lb and US$27/lb
- Maximizing returns by blending production with spot purchases
Unlocking the Value of the Contracts

• Peninsula gained US$19m through contract related transaction in 2018
  • Sold a portion of 2018 through 2021 delivery commitments to a third-party
  • Sold interest in a matching purchase agreement

• Significant contract portfolio carries through year 2030
  • Up to 6.6 million pounds U$_3$O$_8$ remaining under contract through 2030
  • Term contracts weighted price is US$51-53/lb U$_3$O$_8$
  • Customers include multiple US and European Utilities
Premier Uranium Jurisdiction

- Wyoming is a premier uranium extraction jurisdiction, hosting multiple active ISR operations
Large Scale Resource: +20 years mine life

- 53.5m lbs JORC (2012) compliant resource base¹ (50.7Mt at 473ppm U3O8) offers long mine life with existing infrastructure

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Production Results

- Consistent Q over Q production growth with reduced expenditures
  - Production rate above 500 pounds day for month of January 2018
‘Game Changing’ Low pH ISR Initiative

The Potential

✓ Transform the Lance Project cost profile in line with the global industry leading uranium ISR projects
✓ Higher extraction rates and recovery rates

The Basis

✓ Extremely positive testing results using low pH solutions
✓ Low pH ISR White Paper

The Plan

✓ Amendment of the current permit and licences
✓ Continue alkaline ISR operations through transition
✓ Update original Feasibility Study for low pH parameters
Low pH ISR Leads the Way

- All 1st quartile uranium operations globally are in-situ recovery (ISR) facilities that utilize a low pH lixiviant.
Timeline for Low pH ISR Transformation

2017
- Alkaline ISR Operations

2018
- On-going Laboratory Test Work
- Engineering Studies

2019
- Regulatory Approval Process
- Design Revision

2020
- Low pH Operations
1. CAPEX and OPEX
   - CAPEX and OPEX studies initiated
   - Study to outline Lance Project life-of-mine economics underway
   - Changing process chemistry, not the underlying processes
     - Only minor facility modifications are required with minimal capital spend needed to change the process chemistry

2. Ongoing Production Operations and Sales Revenue
   - 9 operational header houses support ongoing production operations
   - Product sales agreements generate cash inflow during the transition period
   - Reducing sustaining capital spending for the short-term
Unlocking the Full Potential of Lance

- **High Potential**
  - Lance Project holds a large scale uranium resource
  - Potential to transform the performance and cost profile using low pH ISR process

- **Short Timeline**
  - Permit and licence amendments in under two years
  - Continued alkaline ISR operations until permitted

- **Low Capital Cost**
  - CAPEX for minor modifications = Minimal
  - Production and sales contracts underpin funding
Karoo Projects | South Africa
**Karoo Projects – South Africa**

- **Formal divestment process underway**

  - **Large Resource**
    - 56.9 million pounds eU3O8 (23.3mt at 1,108 ppm)
    - JORC (2012) compliant resource²
    - Ownership: Peninsula 74% and BEE Partners 26%

  - **Internal PFS Completed**
    - Significant work in the way of technical studies have been completed for the project

  - **Divestment Status**
    - Outcome expected to be known in March quarter
    - Project investment significantly curtailed
Conclusion
Peninsula Energy Investment Highlights

- Continued improvement in Quarter over Quarter results

- Large Uranium Resource
  - Long life flagship project advanced into production stage

- Long Term Revenue
  - Sales agreements extending out to 2030 with above market pricing structures
  - Strong committed cash margins for near term sales

- Spending Discipline
  - Divestment of second tier Karoo project
  - On-going meaningful results on cost reduction efforts

- Unlocking Value
  - Lance Project transformation process initiative
  - Positioning to capitalize on anticipated market rebound
Contact Details

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Subiaco, Western Australia 6008
Australia

www.pel.net.au
info@pel.net.au

FURTHER INFORMATION
Wayne Heili Managing Director +61 8 9380 9920
## Appendix 1 - Lance JORC Resource

<table>
<thead>
<tr>
<th>Classification</th>
<th>Tonnes (million)</th>
<th>U3O8(kg)</th>
<th>Grade (ppm U3O8)</th>
<th>U3O8(lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measured</td>
<td>3.7</td>
<td>2.0</td>
<td>489</td>
<td>4.3</td>
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<tr>
<td>Indicated</td>
<td>10.0</td>
<td>5.1</td>
<td>466</td>
<td>12.7</td>
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<tr>
<td>Inferred</td>
<td>37</td>
<td>17.5</td>
<td>463</td>
<td>36.5</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>50.7</strong></td>
<td><strong>24.6</strong></td>
<td><strong>473</strong></td>
<td><strong>53.5</strong></td>
</tr>
</tbody>
</table>

ISR Reserves are determined after well field development drilling

*JORC Table 1 included in an announcement to the ASX released on 27th March 2014: “Company Presentation – Mines and Money Hong Kong”. Peninsula confirms that it is not aware of any new information or data that materially affects the information included in this announcement and that all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original market announcement.*
### Appendix 2 - Karoo JORC Resource

#### JORC Compliant Resource March 2014

<table>
<thead>
<tr>
<th>Classification</th>
<th>Cut-off: eU3O8 (ppm)</th>
<th>Tonnes (million)</th>
<th>eU3O8 (ppm)</th>
<th>eU3O8 (million lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicated</td>
<td>600</td>
<td>8.0</td>
<td>1,242</td>
<td>21.9</td>
</tr>
<tr>
<td>Inferred</td>
<td>600</td>
<td>15.3</td>
<td>1,038</td>
<td>35</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>600</strong></td>
<td><strong>23.3</strong></td>
<td><strong>1,108</strong></td>
<td><strong>56.9</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classification</th>
<th>Sector</th>
<th>Cut-Off: eU3O8 (ppm)</th>
<th>Tonnes (million)</th>
<th>eU3O8 (ppm)</th>
<th>eU3O8 (million lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicated</td>
<td>Eastern</td>
<td>600</td>
<td>7.1</td>
<td>1,206</td>
<td>18.7</td>
</tr>
<tr>
<td></td>
<td>Western</td>
<td>600</td>
<td>0.9</td>
<td>1,657</td>
<td>3.2</td>
</tr>
<tr>
<td>Inferred</td>
<td>Eastern</td>
<td>600</td>
<td>11.8</td>
<td>1,046</td>
<td>27.2</td>
</tr>
<tr>
<td></td>
<td>Western</td>
<td>600</td>
<td>3.5</td>
<td>1,019</td>
<td>7.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>600</td>
<td><strong>23.3</strong></td>
<td><strong>1,108</strong></td>
<td><strong>56.9</strong></td>
</tr>
</tbody>
</table>

**Large resource potential: 100+ year mine life**

*Note: Totals may not sum exactly due to rounding*

²JORC Table 1 included in announcement to the ASX released on 11th March 2014 :“13% Resource Expansion and Upgrade at Karoo Projects”. 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 estimates continue to apply and have not materially changed.
Appendix 3 - Lance Exploration Target Additional Disclosure

Exploration Target
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 158 and 217mlbs U₃O₈ which includes 54mlbs of existing JORC (2012) Code compliant resource.

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

<table>
<thead>
<tr>
<th>Exploration Target</th>
<th>Tonnes (million)</th>
<th>Grade (ppm eU₃O₈)</th>
<th>eU₃O₈ (mlbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range</td>
<td>From 169 To 196</td>
<td>From 426 To 530</td>
<td>From 158 To 217</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.

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

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 and surface access rights to 122.2 square kilometres and 107.8 square kilometres respectively. 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.
Appendix 3 - Lance Exploration Target
Additional Disclosure

Basis of Grade and Tonnage Range Determination
With a database of approximately 7,500 drillholes together with several decades of geological research the level of exploration activity on which the Exploration Target is based, is considered to be high.

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. Along these channels 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,
- The grade range represents the lowest resource area grades and highest resource area grades

Summary of the Relevant Exploration Data Available and the Nature of the Results
For a comprehensive description of drilling information readers are referred to JORC Table 1 at the end of this presentation.

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. This initial program will be focussed on the Kendrick area. Exploration activities will mostly comprise geophysical logging of additional drillholes.

Lance Projects Competent Person Statement
The information in this presentation that relates to Exploration Targets, Exploration Results and Exploration Potential at the Lance Projects is based on information compiled by Mr. Jim Guilinger. Mr. Guilinger is a Member of a Recognized Overseas Professional Organization 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 mineralization 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.