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DAEJON VANADIUM PROJECT METALLURGICAL TESTING

- Protean is preparing a sample from the Daejon Vanadium Project for testwork targeting the production of high purity, VRFB electrolyte grade, V_2O_5 of greater than **99.5%.**
- The metallurgical testwork program is focussed on understanding and optimising vanadium recovery at its Daejon Vanadium Project.
- Daejon Vanadium Project is unique among vanadium deposits being sediment-hosted. Only around 5% of global vanadium mineral occurrences are sediment hosted.
- Vanadium from the Daejon Project is targeted for producing high-purity vanadium pentoxide required for its vanadium V-KOR battery and alternate vanadium redox flow batteries.
- KIGAM engagement allows for fast tracked advancement of the Daejon Vanadium Project.

Protean Energy Ltd (**Protean** or the **Company**) is pleased to provide details of its metallurgical test work program focussing on the extraction of vanadium and the production of high purity vanadium pentoxide (**V_2O_5**).

The Company has previously announced results from pressure oxidation leach tests achieving average vanadium extraction of around 70%, as well as average uranium extraction of >92% across a range of samples (*refer announcement 24 Nov 2011*). The previous testing predominantly focussed on the extraction of uranium under mild leaching conditions. Subsequent investigations identified two process flow sheet options which could maximise vanadium extraction:

a) Pressure oxidation leaching between the temperature range 120-180˚C to extract uranium and vanadium simultaneously; and

b) Pyrometallurgical treatment of mineralisation to remove carbon and solubilise vanadium minerals, followed by mild acid leaching to extract uranium and vanadium simultaneously.

The Company has a number of bulk samples stored with ALS in Western Australia and these samples are being utilised in the new metallurgical testwork programs. An initial review by Met-Chem Consultants has indicated several different processes that may be utilised to maximise vanadium extraction, and these are currently being assessed in a methodical manner.

In addition to the vanadium extraction testwork, the Company has recently commenced preparing a sample of mineralisation from the Daejon Project area with the aim of producing vanadium pentoxide precipitate with purity levels acceptable for use in vanadium redox flow battery (**VRFB**) electrolyte production. The testwork is expected to take up to 6 weeks to complete with results available by the end of June 2018.

In parallel with the above-mentioned Perth-based testwork, the Company has engaged with the Korean Institute of Geoscience & Mineral Resources (**KIGAM**) and conducted a search of previous studies conducted on samples of Okcheon black shale mineralisation. The mineralisation samples tested were from the same immediate vicinity and geological setting as the Daejon Vanadium Project and analysis by Protean is likely to save significant time and exploration expense.

From published papers by Joon-Soo Kim, Hoo-In Lee, Jin-Young Lee, Jyothi Rajesh Kumar et al in 2013, a flowsheet for uranium and vanadium extraction was developed using two-stage atmospheric leaching.

This process was developed when the price of uranium yellowcake was approximately US$60/lb and the vanadium pentoxide price was relatively subdued at US$6/lb (current price ~US$15/lb1[1]) and, as such, focussed on optimisation of uranium recovery. Published results included:

- **~95%** of uranium was recovered in the form of yellowcake;
- Vanadium precipitation recovery from leach solution above **96%**; and
- the dried and calcined filtered vanadium precipitate was of **98%** purity as recovered using a basic ammonium metavanadate precipitation circuit. Protean expects that high purity ammonium metavanadate exceeding **99.5%** purity can be produced from the precipitate with an optimised precipitation circuit flowsheet. Testwork to this effect is currently under way.

The Company believes that the published historical metallurgical results and other previous physical test work specifically developed for processing of Okcheon black shale mineralisation and leach liquor, represents a solid platform to fast track the economic assessment of the Daejon Vanadium Project.

Sediment Hosted Vanadium

The Daejon Vanadium Project is relatively unique among the majority of vanadium deposits in the world as it is a sediment-hosted deposit. Only around 5% of vanadium occurrences are sediment hosted, with the vast majority being magnetite based.

Being sediment-hosted, the Daejon vanadium is potentially well suited to produce high-purity vanadium pentoxide (V_2O_5), which is a key precursor material required to produce the liquid electrolyte that powers a vanadium redox flow battery (**VRFB**). The VRFB is currently recognised as a leading, large-scale energy storage system technology for the harnessing of base-load energy and as such, is forecasted by industry analysts to result in future demand growth.

Daejon Project Background and Next Steps

The Company previously explored the Daejon Vanadium Project area for both uranium and vanadium with this work culminating in the definition of both uranium and vanadium Mineral Resources. In 2012 and 2013, the Company undertook a significant body of work to understand the metallurgy and processing options for the deposit. The encouraging results were outlined in a presentation to the Australian Uranium and Rare Earths Conference released to the ASX on 16 July 2013.

The first phase of the recently commenced work program analysed drill core from the 5-hole diamond drilling campaign completed by the Company in 2013. As a result of the success of this initial orientation program, the Company commenced a work program earlier this year, which is being conducted in stages, to analyse the relevant mineralised sections of the 36,000m of drill core (from 252 diamond holes drilled during the 1980s) held by KIGAM.

The Company plans to progressively report results from this XRF program and expects, during June 2018, to report an updated interim Mineral Resource in accordance with the JORC 2012 followed by a further updated resource over the entire ~8km strike length later in the year.

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For further information, see www.proteanenergy.com or contact: Protean Energy Ltd T: + 61 8 9481 2276

[1] http://www.vanadiumprice.com/

DAEJON PROJECT BACKGROUND AND OBJECTIVES

The Company's focus during 2010 – 2013 was to develop the Daejon Project primarily as a source of Uranium for Korea's nuclear power sector. In 2012 & 2013 the Company undertook a significant body of work to understand the metallurgy and processing options for the deposit, and it became apparent that the economic success of the project would be greatly enhanced by maximising the amount of vanadium recovered from mined ore. This conclusion is further reinforced by current depressed uranium prices and strong vanadium prices. The Company aims to rapidly improve its understanding of the project's potential as a source of vanadium with a uranium co-product.

ABOUT STONEHENGE KOREA LIMITED

Protean Energy Limited (ASX Code: POW) is developing a multi-mineral project in South Korea through its 50% holding in Stonehenge Korea Limited (SHK). SHK is a JV company with two KOSDAQ listed industry partners being DST Co Ltd (DST) [formerly KORID] and BHI Co Ltd (BHI). SHK owns 100% of the rights to three projects in South Korea, including the Company's flagship Daejon Project. The Daejon Project contains a vanadium resource of 17.3Mlbs (largely indicated) grading **3,186ppm V_2O_5** at a cut-off of **2,000ppm V_2O_5**. The vanadium resource is coincident with a larger uranium resource advised to ASX on 29/08/2013 and 31/10/2013 *(This information was prepared and disclosed under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since announcement on 29/08/2013)*.

V_2O_5 Mineral Resource Estimate @ 2,000 ppm V_2O_5 cut-off[2]			
Classification	Tonnage	Grade	Metal
	Mt	ppm	Mlbs
Indicated	**2.3**	**3,208**	**16.5**
Inferred	**0.1**	**2,788**	**0.8**
Total	**2.5**	**3,186**	**17.3**

Vanadium Exploration Target[1]		
Tonnes (Mt)	Grade V_2O_5 (ppm)	Contained V_2O_5 (Mlbs)
70 - 90	**2,500 - 3,500**	**385 - 695**

[1] The potential quantity and grade of the Exploration Target is conceptual in nature, there has been insufficient exploration to define a Mineral Resource, and it is uncertain if further exploration will result in the definition of a Mineral Resource. The vanadium exploration targets are based on exploration results from the 2013 drilling at Chubu (refer announcements 15 July and 13 November 2013) that demonstrated vanadium mineralisation through the black shales. The geology in the Okcheon belt consists of a meta-sedimentary sequence that comprises three formations, Wunkyori, Hwajeonri and Guryongsan. Stonehenge Korea will test the validity of the exploration target now that access to historical drill core has been obtained and the Company can analyse the core for vanadium mineralisation.

[2] These estimates were prepared and first disclosed under the JORC Code (2004). They have not been updated since to comply with the JORC Code 2012 on the basis that they have not materially changed since release

COMPETENT PERSON'S STATEMENT

The information contained in this ASX release relating to Mineral Resources has been compiled by Mr Ian Glacken of Optiro Pty Ltd. Mr Glacken is a Fellow of The Australasian Institute of Mining and Metallurgy and 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 to qualify as a Competent Person as defined in the 2004 and 2012 editions of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Glacken consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information relating to Metallurgical Testwork data has been reviewed and compiled by Mr Brett Crossley of Met Chem Consultants. Mr Crossley is a Member of The Australasian Institute of Mining and Metallurgy and has sufficient experience which is relevant to the testwork that has been conducted and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 and 2012 editions of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Crossley consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.