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SIGNIFICANT IMPROVEMENTS IN CAPITAL COST AND EXECUTION STRATEGY FOR THE DZP

DUBBO ZIRCONIA PROJECT (DZP) – zirconium, hafnium, niobium, yttrium, rare earth elements
Australian Zirconia Limited (AZL) – 100%

Highlights

- **DZP to be constructed in two stages of 500 ktpa each**
- **Execution on a modular basis, with transportable modules constructed off site at reduced cost and reduced site install time**
- **Internal review shows this could cut the estimated upfront capital from US\$930M to US\$480M including contingency for the first stage**
- **Staged and modular process lessens financial risk and allows the plant to expand as markets are established**
- **Revised financials will be released following completion of a detailed assessment of this concept in the March Quarter 2017**

Cost Reduction Study

Since the release of the Front End Engineering Design (FEED) study in August 2015 based upon one million tonne per annum throughput and a capital cost of US\$0.93 billion, AZL has continued to examine ways to reduce the capital cost of the project. This has led the Company to conclude that significant capital cost reductions can be achieved by using a modular construction method; by building the plant off-site in compact sections to transport economically to the Dubbo site.

Modular and Staged Construction

This modular construction method has the advantage of significantly reducing the on-site construction presence, thereby reducing both cost and associated risk. Further, the modules themselves will be built in a lower cost environment in Australia or overseas, and pre-tested prior to transporting to site.

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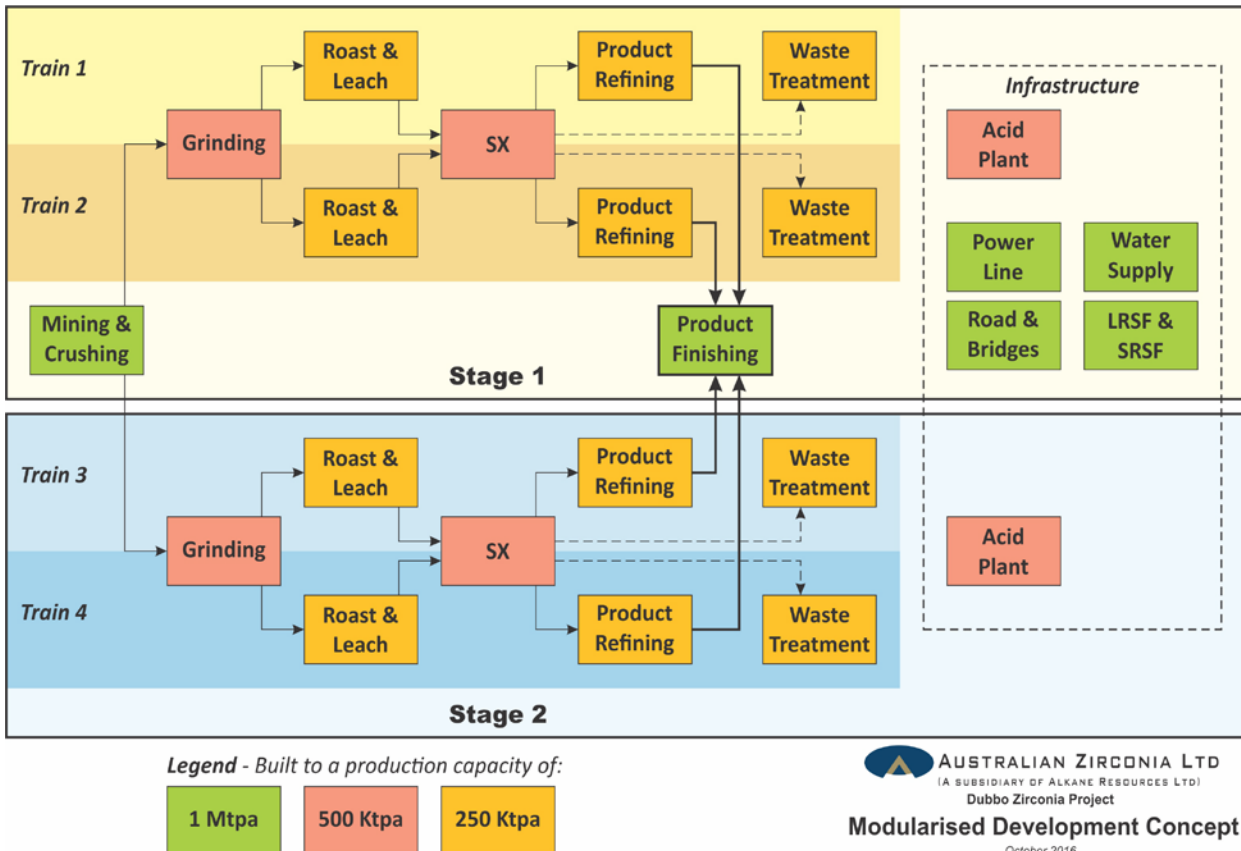
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With the size of the modules determining the size of the equipment that can fit inside them, analysis has shown that equipment sized at a 250 ktpa feed rate, a quarter of the full plant feed rate, is a natural fit for much of the process. Therefore at its most basic level the process plant will be constructed as four quarter trains in order to achieve full capacity. There are sections of the plant, particularly in the refining and finishing areas where the flowrates are lower where the individual module will have sufficient capacity to service two trains, or even the full four trains. A high level schematic of the potential plant illustrating this concept is shown below.



As well as anticipated capital cost savings, this modularisation concept has given rise to the possibility of staging the overall build of the project whilst preserving the project economics. The Company considers the most advantageous option is to build the plant in two stages, each of 500 ktpa, or half capacity. The second stage will be built after the first stage is successfully commissioned and customer relationships and revenue streams established. Each stage will have the full flowsheet of the overall plant already communicated, although there will be some common infrastructure installed in the first stage.

This concept, including the detail below, has been prepared internally and has drawn on the expertise of consultants from the oil and gas sector, who are expert in offshore modularisation and cost reduction, as well as from the continued Early Contractor Involvement (ECI) process with Outotec. Modularisation has been an increasing part of the value solutions offered by Outotec, demonstrated particularly in their VSF-X technology (for solvent extraction) and rapidly expanding into other product lines. The Company intends to continue the ECI process with Outotec, with a sharp focus on modularisation and a staged build.



Preliminary conceptual estimates for the cost of each stage and target timing are given in the table below.

	Stage 1 – 500 ktpa	Stage 2 – 500 ktpa	Complete Project 1Mtpa
Target Construction Commenced	2017	2022	2017
Target Construction Completed	2019	2023	2023
Estimated Capital US\$M	480	360	840

The difference in cost between the two stages is driven by several factors:

- The building of infrastructure, including the upgrading of Obley Rd, the establishment of power to site, establishment of water to site and waste management infrastructure in the first stage only.
- The increased up-front engineering required to successfully execute a modularisation strategy.
- The decrease in contingency, engineering and management required for the second stage.

Advantages

This modularised staged approach has several advantages for investors, financiers and offtakers:

- It significantly reduces the initial capital spend of the project.
- It provides rapid advancement into production.
- It reduces the overall financial outlay of the full 1Mtpa project.
- It increases the percentage of revenue in the first stage covered by offtake contracts, memorandums of understanding and letters of intent.
- It allows a smaller commitment by counterparties that can grow with the project.
- It allows the Company to continue to develop and grow the market for its products, once they are successfully proven in the marketplace.

The Company will now continue to progress the engineering on this basis, and pursue financing on the basis of this improved business case. A revised financial model, incorporating updated operating costs and revenue streams will be presented at the completion of this study which is expected to be before the end of the March Quarter 2017.



Disclaimer

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ABOUT ALKANE - www.alkane.com.au - ASX: ALK and OTCQX: ANLKY

Alkane is a multi-commodity company focused in the Central West region of NSW, Australia. Currently Alkane has two advanced projects - the Tomingley Gold Operations (TGO) and the nearby Dubbo Zirconia Project (DZP). Tomingley commenced production early 2014. Cash flow from the TGO has provided the funding to maintain the project development pipeline and will assist with the pre-construction development of the DZP.

The NSW Planning Assessment Commission granted development approval for the DZP on 28 May 2015 and on 24 August 2015 the Company received notification that the federal Department of the Environment gave its approval for the development. Mining Lease 1724 was granted on 18 December 2015 and the Environment Protection Licence was approved on 14 March 2016. Financing is in progress and this project will make Alkane a strategic and significant world producer of zirconium, hafnium and rare earth products when it commences production in 2018.

Alkane's most advanced gold copper exploration projects are at the 100% Alkane owned Wellington and Bodangora prospects, and Elsienera farm-in. Wellington has a small copper-gold deposit which can be expanded, while at Bodangora a large monzonite intrusive complex has been identified with porphyry style gold copper mineralisation. Encouraging gold mineralisation was recently drilled at Elsienera.

