

# Image Resources NL: Strong Bankable Feasibility Study Results for Boonanarring / Atlas

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Perth - [Image Resources NL](#) (ASX:IMA) (OTCMKTS:IMREF) ("Image" or "the Company") is pleased to announce the results of a Bankable Feasibility Study (BFS) on its 100%-owned Boonanarring and Atlas mineral sands deposits (collectively the 'Project') located in the infrastructure-rich North Perth Basin, with Boonanarring approximately 80 km north of Perth, Western Australia.

## HIGHLIGHTS:

- Low project capital cost estimate of A\$52M inclusive of ~\$8M for resalable land;
- Project Pre-Tax NPV of A\$135M at 8% discount rate;
- Project Pre-Tax IRR of 64%;
- Payback period of 22 months;
- Off-Take Agreement for 100% of products/revenue in place;
- Relocatable capital equipment to produce HMC already acquired;
- First production targeted for March 2018;
- Upside Opportunities at and near Boonanarring including:
  - o Confirmed potential to extend mine life with high grade mineralisation;
  - o Potential to process lower grade overlying layer of mineralisation;
  - o Several other deposits with high grade Mineral Resources in the vicinity.

The Project is considered a very low capital cost project when compared to other mineral sand projects (Figure 3 in link below) with a rapid payback period estimated at just 22 months. The BFS includes estimated project capital costs of approximately A\$52M with approximately \$8M for the purchase of land which is resalable following the completion of mining and rehabilitation.

The pre-tax NPV for the Project is estimated to be A\$135M, based on TZMI forecast mineral sands prices (Figure 1 in link below), using an 8% discount rate, with a corresponding IRR of 64%. Importantly, using current 'spot' commodity prices as at 30 April with no escalation in future years, results in a very healthy pre-tax NPV estimate of A\$58M. This estimate will increase as commodity prices rise; for example, as recently announced by Iluka Resources indicating a zircon price increase of US\$130/tonne (up to US\$1,100/tonne), scheduled to take effect 1 July 2017.

## Capital Equipment

The principal reason capital costs for the Project are so low is that the Company has already acquired (June 2016) the key capital equipment required to receive run-of-the-mine ore at the mine and to transport the ore slurry to and through a wet concentration plant (WCP) for the recovery of heavy minerals and production of heavy mineral concentrate (HMC) product. This equipment is currently being stored in South Australia and will be relocated and reassembled at the Boonanarring mine site following completion of Project financing.

## 100% Offtake

Importantly, the Company has secured an offtake agreement for 100% of the HMC to be produced for the life of the Project with established HMC processing company Shantou Natfort Zirconium and Titanium Co., Ltd (Natfort) in China. Pricing will be based on then-current relevant market prices for contained zircon, rutile,

leucoxene and ilmenite and with full value for the contained TiO<sub>2</sub> products on a shipment by shipment basis. The HMC pricing model has been reviewed and endorsed by TZMI as market-based and utilising standard industry protocols for pricing HMC. This offtake is an arm's length, market-based arrangement which contractually secures 100% of the revenue for the Project.

The HMC offtake agreement with Natfort is subject to shareholder approval. The zircon offtake agreement previously approved by shareholders with Guangdong Orient Zircon Ind Sci & Tech Co., Ltd (OZC) will be placed in indefinite suspension, and the zircon produced by Natfort from the processing of the Image HMC will be sold by Natfort to OZC in return for OZC agreeing to suspend the zircon offtake agreement. Changing from a zircon offtake to HMC offtake agreement has several positive outcomes for Image as follows:

- it results in securing 100% of revenue instead of 65-70% for zircon only;
- it provides faster access to revenue as letters of credit can be converted to cash as soon as each shipment of HMC departs the Bunbury port, as compared to having to wait until the HMC is processed into final products and the zircon is loaded and departs the port of loading;
- it minimises total working capital requirements by A\$7-8M due to the faster receipt of revenue; and
- it eliminates Image's risks and potential extra costs associated with HMC processing (separation) including processing and delivery schedules, product quality issues, administration and marketing.

#### Project Upside Potential

The Project BFS is based on current Ore Reserves at Boonanarring and Atlas with a combined mine life of over 8 years. Importantly, there are a number of opportunities to extend the Project mine life including potential future production from a confirmed 5.6km extension area of high grade mineralisation to the north of Boonanarring that is within economic pumping distance of the planned location of the WCP (ASX announcement 13 March 2017 - Outstanding Drill Results Confirm 5.6km High Grade Extension of Boonanarring Deposit). Similarly, there is potential for extension of the Boonanarring deposit to the south and potential for extension of the current deposit at Atlas to the south, as well as potential additional Ore Reserves stemming from a reassessment of existing Mineral Resources if and as general market conditions and commodity prices improve.

In addition, consultant Optiro Pty Ltd identified a significant layer of lower grade mineralisation overlying high grade mineralised ore at Boonanarring in the update of the Mineral Resources estimate in accordance with the JORC Code (2012), (ASX announcement 13 January 2017 - Tonnage Doubles in Mineral Resources Update for Boonanarring Project). Only a small proportion of this mineralisation was included in the mine plan for the BFS. Consequently, there is an opportunity to process the balance of this material as commodity prices further improve.

Finally, Image has several other high-grade mineral sands projects with mineral resources in the vicinity of Boonanarring, that could potentially be accessed for mining in the coming years, by dry mining method and WCP processing as planned for Boonanarring and Atlas. These projects include Red Gully, Gingin South and Regans Ford which is still under application. Image also has two highgrade projects in the vicinity of Atlas that could potentially be accessed in the coming years, being Hyperion and Helene, with Hyperion potentially within pumping distance of the Atlas deposit.

#### Go-Forward Plan/Process

The Project has been on a fast-track development basis since June 2016, with project commissioning scheduled to occur in Q1 2018 and first production anticipated as early as March 2018. Now that the BFS has been completed, Image plans to continue to fast-track the development of the Project by proceeding directly to seeking to secure Project financing through a combination of debt and equity.

However other project financing methods will also be considered. The Company has engaged the services of PCF Capital Group to assist with the debt portion of the financing.

In addition, Image's project team and consultants will continue to review capital and operating costs to determine if any aspects of the plan can be further optimised to reduce overall costs.

#### BFS RESULTS

##### Financial Overview

The BFS is based on independent third party engineering, costings and pricing assumptions and financial

modelling. BFS results demonstrates the Project is a relatively low capital cost project at only A\$52M which includes approximately 15% for the purchase of land associated with the Boonanarring deposit. Pre-tax NPV is robust at A\$135M based on an 8% discount rate, and a post-tax NPV of A\$100M. Pre-tax and post-tax Internal Rate of Return (IRR) are 64% and 54% respectively.

The Project will provide significant returns and rapid payback on capital, estimated at only 22 months. Key financial metrics are summarised in Table 1.

Assuming the HMC offtake agreement will operate as contracted, Project cashflows are strong and will 100% underpin the life of the Project. Month by month revenue, operating costs, capital expenditure, tax and cash flow financial model projections are presented in Figure 2 in link below. Project Net Revenues, Royalties, Operating Costs and EBITDA are presented in Table 2.

Table 1: Project Financial Metrics

Valuation Date	1-Jul-17
Discount Rate	8%
Pre-Tax Project NPV (A\$M)	135
Post-Tax Project NPV (A\$M)	100
Pre-Tax IRR	64%
Post-Tax IRR	54%
Payback Period - From Construction Start (years)	2.2
Payback Period - From First Production (years)	1.8
Project Capital (A\$M)	52

Note: figures presented in this Table are rounded.

Table 2: Project Net Revenues, Operating Costs and EBITDA

A\$M, Real 2017 Prices	Boonanarring	Atlas	Project
Revenue	553	240	793
Royalties	(26)	(11)	(37)
Net Revenue	527	229	756
Operating Costs	(336)	(154)	(490)
EBITDA	191	75	266

### Sensitivity Analysis

The Project is relatively sensitive to movements in commodity prices, particularly zircon, as 60-70% of revenue is expected to be generated from contained zircon. Another key sensitivity is the A\$:US\$ exchange rate, given HMC will be priced in US\$, whereas most of the capital and operating costs will be denominated in A\$. Other areas of sensitivity are ore grade, HM recovery to product and operating costs.

Importantly, using 'spot' commodity prices and \$A:\$US exchange rate (as at 30 April 2017) with no escalations, results in a very positive project NPV of A\$58M at an 8% discount rate. Moreover, mineral sands commodity prices have recently started trending upwards and are continuing to rise, as demonstrated by a recent announcement by Iluka Resources indicating a zircon price increase of US\$130/tonne (up to US\$1,100/tonne), scheduled to take effect 1 July 2017.

As a demonstration of the sensitivity of commodity prices, if the average price of all four mineral sand commodities increase 20% from TZMI commodity projections used in the financial model, the project NPV increases sharply to more than A\$250M. Figure 3 displays various Project sensitivities.

### Project Mine Life

Project economics are based on known current Ore Reserves for an initial 5 year mine life at Boonanarring followed by a move to Atlas to add a further 3 years to overall life of mine, as detailed in the financial model.

### Capital Costs

Total development capital for Boonanarring is estimated at A\$52M. Approximately A\$8M of this total is

attributable to land purchases which will be available for resale once mine rehabilitation has been completed on each parcel.

The Boonanarring capital cost estimate for the Project has been prepared in accordance with capital cost estimating guidelines and BFS study standards. The inputs to this Study generally meet or exceed the requirements for BFS capital estimating. The total capital cost estimate complies with the required accuracy range of ±15%. Atlas is at PFS level of study. Peak cash draw for the development of Boonanarring is estimated at A\$64M.

Figure 4 in link below shows the relative capital cost for development of the Boonanarring deposit as compared to other mineral sands projects and demonstrates Boonanarring is a very low capital cost project.

Figure 5 in link below shows the relative comparison of the capital cost/revenue ratio for Boonanarring versus other mineral sands projects and once again demonstrates the very low capital cost of the project.

#### Revenues

The Project will produce HMC containing four main products: ilmenite (both sulphate and chloride grades), leucoxene, rutile and zircon. Revenue will be based on the sale of HMC as a final product but with pricing based on then-current commodity pricing for each of the four main products. Project revenues are estimated at A\$793M (Boonanarring: A\$553M; Atlas: A\$240M).

Zircon contained in the HMC is the key value driver representing 68% and 40% of total revenue for Boonanarring and Atlas respectively. Boonanarring zircon recovered is expected to be sold as standard grade zircon, however there is potential for some premium grade product. Atlas HMC is expected to produce a premium zircon product.

#### HMC Off-take Agreement

The potential cashflows, and hence financing for the Project, will be underpinned by a life-of-Project offtake agreement for all HMC produced. The offtake agreement is with Natfort Zirconium and Titanium Co., Ltd (Natfort), a private HMC processing company in China, which processed HMC from Murray Zircon's Mindarie Mineral Sands Project in South Australia and sold the zircon to Orient Zircon Sci Ind & Tech Co., Ltd. (OZC) for the past five years. Natfort (previously Shantou Guofu Zirconium and Titanium Co., Ltd) is located in Shantou City in the Guongdong Province in China and was established in 2012. Natfort focuses exclusively on processing mineral sands concentrates to produce zircon for sale to OZC and TiO<sub>2</sub> products for sale to its customers in China.

Key highlights of the HMC offtake agreement are that 100% of HMC produced from the Project will be sold, with no minimum specification on HMC quality. Pricing for HMC will be based on a pricing model reviewed and endorsed by TZMI and which was confirmed to be market-based using published commodity prices (CIF China) with adjustments for the specific quality of Project products. The pricing model also includes allowances for HMC processing costs, foreign exchange rates, port handling and transport to the separation plant in China, estimated recoveries and an agreed 5% profit margin for the processor (Natfort).

HMC sales will be supported by Letters of Credit from Natfort based on the predetermined value of the HMC per the HMC pricing model. Natfort's LCs will, in commercial effect, be indirectly supported by the provision of LCs from OZC to Natfort for the purchase of a minimum of 90% of the zircon produced by Natfort from the processing of the Image HMC. The existing zircon offtake agreement between Image and OZC will be indefinitely suspended during the period of operation of the HMC offtake agreement with Natfort.

#### Operating Costs

Project Operating costs are estimated at A\$489M (Boonanarring: A\$336M; Atlas A\$154M). Details are provided in Table 3.

#### Logistics

During operations, all HMC supply-chain activities will be undertaken by a logistics contractor. The contractor will employ a team to oversee and arrange all activities that will allow HMC to be transported, stockpiled and loaded for shipping to China. Roads and logistics facilities are well established.

#### Table 3: Project Operating Costs

Item	Boonanarring		Atlas	
	A\$M	A\$/t HMC(1)	A\$M	A\$/t HMC(1)
Mining	206.8	185.5	62.5	87.80
Processing	34.3	30.7	19.7	27.7
Direct cost	241.1	216.2	82.2	115.5
Land Access	0.6	0.5	0.5	0.6
Native Title Payments	-	-	1.5	2.2
Site Admin	19.8	17.8	18.9	26.6
Logistics(2)	73.9	66.3	50.9	71.6
Subtotal Operating Cost	335.4	300.8	154.0	216.5
Royalties(3)	26.0	23.4	10.9	15.4
MRF Levy(4)	0.1	0.1	0.1	0.1
Total Operating Costs(5)	361.5	324.2	165.0	232.0

#### Table Notes:

- (1) Based on total HMC production of 1,115kt for Boonanarring and 711kt for Atlas  
(2) Includes road transport, port charges and shipping  
(3) Royalties are charged on the value of HMC sold at 5% (and treated as a deduction against revenues).  
(4) Mineral Rehabilitation Fund Levy is charged at an average rate per hectare of disturbance  
(5) Excluding capitalised pre-strip of A\$7.5M included in initial development capital

#### Key Risks

Key risks were identified and classified as priority action risks. Each risk has been assigned within the owner's team and action plans have been developed to mitigate the risks. The key risks include:

- Securing full Project capital funding;
- An increase in working capital or preproduction expenditure resulting in top-up funding being required;
- Delays in implementation resulting in additional capital, working capital or preproduction costs;
- Negative movements in commodity prices and/or foreign exchange;
- o Pre-financing: resulting in delays or difficulties in raising the required funds for development of the Project;
- o Post-production: resulting in weaker than expected cash flows/returns from the Project;
- Failure of the HMC offtaker to meet its obligations under the HMC Offtake Agreement, and in particular to provide letters of credit on a timeous basis as required;

#### Post-BFS Project Schedule

The current project schedule anticipates full Project funding being secured during the third quarter of 2017, so as to facilitate the opportunity for the Board of Directors to render a decision to mine, which would be followed by a rapid construction period and a move to the processing of ore commencing as early as March 2018. Delays in the completion of Project funding or in the Board reaching a decision to mine will inevitably delay the start of construction and commencement of production.

#### Decision to Mine

In accordance with the Share Consideration Deed between Image and Murray Zircon (dated 8 June 2016), the Decision to Mine is the decision approved by a majority of the Board to incur the required costs in connection with the construction of a mining and processing operation required to commence commercial production, and includes the approval of a target date for the commencement commercial operations. The criteria for a decision to mine includes the following:

- The receipt of all necessary government agency approvals, consents, licences, permits and registrations;
- Full project funding facilities in place and available for drawdown; and
- All material contracts, necessary for the construction and commencement of mining and HMC production, negotiated and prepared for execution.

It is important to note that if the Decision to Mine occurs prior to 8 June 2018, Murray Zircon must be issued (within 5 business days of the Decision to Mine) additional shares in Image in accordance with the Share Consideration Deed. The number of shares is equal to 5% of the total number of Image shares on issue at the time of the execution of the Asset Sale and Purchase Agreement between Image, Murray Zircon and OZC (8 June 2016), being 35,198,459 shares.

#### Implementation Plan

The Boonanarring mine and site construction is scheduled to commence Q3 2017, followed by commissioning and first production in Q1 2018 (refer Figure 6 in link below). A three month period for ramp-up to full production has been reflected in the implementation plan.

#### Opportunities

Opportunities will be considered during the detailed design and implementation stages of the Project as summarised in Table 4 in link below.

#### BFS Conclusions and Recommendations

Based on the financial outcomes of the BFS and subject to Board approval, it is anticipated that Image will proceed with Project financing and development, including funding considerations to meet orders for certain long-lead items including a slimes thickener, ore slurry attritioner and high voltage design and procurement. Early commitment to long-lead items will minimise delays in implementation of the Boonanarring development schedule.

To view the BFS Executive Summary by Battery Limits, please visit:  
<http://abnnewswire.net/lnk/52N6M48J>

#### About Image Resources NL:

[Image Resources NL](#) (ASX:IMA) is an emerging Mineral Sands producer focused on the development of its high-grade Boonanarring Project in the North Perth Basin while continuing to expand its resources and reserves base.

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