



## ASX ANNOUNCEMENT

22 May 2014

# Keysbrook Project Update

- The Keysbrook Project has been advanced significantly since the 2012 feasibility study
- Robust financial metrics remain, with considerable upside growth potential
- The project is considerably derisked
- GR Engineering appointed as preferred construction contractor
- Offtake agreements in place for 62% of production by volume
- Further drilling and metallurgical testwork programs have underpinned operating and production assumptions used in the feasibility study
- Mine plan optimisation has resulted in an improved product profile through the life of reserves
- Material upgrade to resources with further exploration potential
- Mining strategy remains owner operator

MZI Resources Ltd (MZI) is pleased to provide an update to progress on the Keysbrook Project since announcing the feasibility study in October 2012.

MZI Chief Executive Officer, Trevor Matthews, said that the advancements made to the project during this time have created value for shareholders, as well as derisked the project and assisted in finalising the financing process.

*"The Keysbrook Project has been progressing while the Company has gone about completing the financing process. We are now at a point where we can confidently proceed with the Keysbrook development with an improved construction contracting strategy, defined commercial arrangements with stronger local relationships and greater upside for shareholders once operations commence".*

### Project Overview

The Keysbrook Project, located approximately 70km south of Perth, comprises heavy mineral sands contained in degraded dunes within the Bassendean Formation. The Project is characterised by its high leucoxene content, and once in operation will be one of the world's largest producers of the premium Leucoxene 88 (comprising 88% titanium dioxide) product.

At present, Mineral Resources comprise 78.9 million tonnes at 2.5% heavy minerals (refer to Appendix for Resource and Reserve classification and Competent Persons Statement).

At present, Ore Reserves comprise 26.0 million tonnes at 2.6% heavy minerals and is dominated by Leucoxene 88 (46.6% of the mineral assemblage) followed by substantial amounts of Leucoxene 70 (27.8% of the mineral assemblage) and Zircon (14.6% of the mineral assemblage). Ore Reserves are confined to the areas within the Mineral Resources which have the requisite approvals from the Western Australian Environmental Protection Authority (EPA), the Shire of Murray, the Shire of Serpentine Jarrahdale, and where compensation agreements have been entered into with local landowners. MZI intends to apply for approvals to access further mining areas once in operations. Subject

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to the availability to convert Mineral Resources to Reserves, as well as gaining the necessary approvals and land access, the Project has a potential +15 year life.

### Key Financial Metrics

The Company has run a number of sensitivity analyses through its financial model, the framework of which is also being used by the financing parties. The following table shows the equity based (ungeared) NPV and near term annual EBITDA range under two pricing assumptions:

Metric	Base Case Pricing	High Case Pricing
Near term annual EBITDA <sup>2</sup>	\$46 million	\$52.5 million
NPV (Reserves only) <sup>3, 4</sup>	\$57 million	\$70 million
IRR (Reserves only)	32.8%	38.6%

The Keysbrook Project has considerable growth potential beyond its initial Reserves.

To maximise shareholders value by achieving this growth the Company is progressing to pursue the necessary approvals, access and conversion of Mineral Resources for the Keysbrook Project so as to achieve a potential +15 year mine life for the Project.

Should the Company be successful in converting Measured and Indicated Mineral Resources to Ore Reserves and obtaining the necessary approvals and land access agreements to access further mining areas, and achieve an increased mine life for the Project, the Project NPV would increase substantially up to \$153 million (in the Base Case pricing) and up to \$166 million (in the High Case pricing)<sup>5</sup>.

#### Notes:

1. Revenue assumptions have been based on indexing to the Q1 2014 TZMI pricing outlook for comparable pricing benchmarks to Keysbrook's product suite (note the TZMI Base and High cases converge to the same long term pricing).
2. Near term EBITDA's reflect the average first full 3 years of operations.
3. The NPV's reflect project level NPV's only, are based on a nominal 10% discount rate and long run AUD:USD exchange rate of 0.80.
4. NPV (Reserves only) is based on the projects Ore Reserves – which includes those mining areas where the Company has all approvals in place to extract ore.
5. NPV (Measured and Indicated Mineral Resources) is based on all Measured and Indicated Resources in the project area. The Company has completed preliminary mine planning on these areas, and considers that the only impediment to converting these Mineral Resources to Reserves is the gaining of additional access and approvals, which it is confident it can do so. In the event the Company is not able to achieve these access and approvals, the project would be based solely on Ore Reserves.

### Key Project Parameters

The following table shows the current key project parameters:

Metric	Unit	Result
Project Life	Years	5.5
Waste ratio	Waste:Ore	Nil
Mining rate	M dtpa	4.5
Mined Ore Tonnes	Mt	24.5
THM Grade	%	2.65
<b>Assemblage (of THM)</b>		
Leucoxene 70	%	27.4
Leucoxene 88	%	48.7
Zircon	%	13.7
Concentrator (WCP) Feed Rate	M dtpa	4.0
HMC produced at Keysbrook Site	Average dtpa	110,000
<b>WCP Mineral Recovery</b>		
Leucoxene 70	%	92
Leucoxene 88	%	72
Zircon	%	100
<b>Doral Mineral Separation Plant (MSP) Processing Utilisation</b>	time	Month on-month off processing arrangement
<b>MSP Product Recovery</b>		
Leucoxene 70	%	100
Leucoxene 88	%	90
Zircon	%	99
<b>Average Annual Production</b>		
L70	Average kdtpa	30.2
L88	Average kdtpa	37.2
Zircon concentrate (contains 56% zircon and 10% L88)	Average kdtpa	28.7

Annual production of L70 and L88 has increased approximately 16% and 3% respectively when compared with the feasibility study.

### Development Costs

Since completing the feasibility study, MZI has continued to refine and derisk the development cost for the Keysbrook Project. This work has included:

- A Front End Engineering Design study completed in mid 2013;
- A competitive tender process for the construction activities, resulting in the selection of GR Engineering Services Ltd as preferred contractor on a lump sum, turnkey EPC contract basis in October 2013;
- Firm proposals obtained from remaining key construction contract providers, including the Mining Feed Unit and establishment of power infrastructure;
- Zero-based budgeting exercises on remaining development and pre-production operating costs; and
- Further input from third party experts with respect to key development cost areas, including mining activities, power requirements and maintenance.

Total project capital costs are estimated at \$61.9 million, of which \$54.6 million is secured under a lump sum, turnkey price from the preferred EPC Contractor, GR Engineering Services Ltd. With the inclusion of Owners and Other Costs of \$11.3 million, total development costs are \$73.2 million, as shown in the table below:

Cost Area	A\$ million
<b>Project Capital Costs</b>	
Construction Costs (EPC contract)	54.6
Power Infrastructure	4.4
Contingency	2.9
<b>Total Project Capital Costs</b>	<b>61.9</b>
<b>Owners and other costs</b>	
Landowner payments	4.0
Capital – Owners (incl. growth)	5.2
Capital - Other	2.1
<b>Subtotal Owners and other costs</b>	<b>11.3</b>
<b>Total Development Costs</b>	<b>73.2</b>

Notes:

1. Project Capital Costs comprise construction costs directly related to the Project
2. Contingency and growth of a combined \$5.9 million has been assumed over and above the EPC Contract price
3. Owners and other costs include land payments, growth and acquisition of environmental monitoring equipment
4. The estimate is in nominal (escalated) terms

Within the development costs estimate, there is a high proportion of fixed costs and a higher level of contingency/growth than assumed in the feasibility study. This strategy has been pursued by MZI to minimise the risk of cost overrun.

In addition to the development costs, \$10.7 million will be incurred in pre-production operating activities. These costs, whilst capitalised, are directly linked to revenue (and as such are working capital). Incremental and sustaining capital averages approximately \$800,000 per annum over the life of the mine.

### Operating Costs

Since completing the feasibility study, MZI has continued to refine and derisk the operating cost profile for the Keysbrook Project. This work has included, in addition to the work discussed above:

- A competitive tender process on mining activities, which resulted in MZI selecting owner mining;
- A competitive tender process for the provision of logistics services (which is expected to be finalised shortly); and
- Zero-based budgeting exercises on remaining operating costs.

Annual operating costs (2013 A\$) are estimated at approximately \$40.6 million, or \$422 per tonne of product, as per the following table.

Cost Area	A\$ million p.a.	A\$/tonne product
Mining	13.0	135
Wet plant	8.4	87
Dry plant	7.2	75
Transport	3.4	35
Admin, landowner, royalty & community payments	6.6	68
Rehab and environment	1.2	12
Mine closure	0.9	9
<b>Total</b>	<b>40.6</b>	<b>422</b>

#### Notes

1. Operating costs reflect the average yearly operating costs for Keysbrook
2. The costs include all administration

In addition, the Company has also:

- Conducted further water recovery testwork to confirm water capture and recycling assumptions used in the feasibility study;
- Excavated a series of bulk sample pits to check the conditions of the pit floor and interface between Ore Reserves and the basement material;
- Undertaken further mine planning activities in order to further optimise the production profile; and
- Undertaken additional exploration programs in order to confirm assumptions used in the declaration of Mineral Resources, and to provide additional quality assurance / quality control on historical programs;

#### Product Offtake

MZI has offtake agreements in place for all Leucoxene 70 and zircon concentrate products, representing approximately 61% (by volume) and 46% (by revenue) of total production.

The Company is in advanced discussions with a number of parties with respect to the Leucoxene 88 product and expects to finalise these discussions ahead of a decision to proceed with the development.

#### Community Engagement

MZI has established regular meetings with local community members through the Community Consultation Group (CCG), which comprises members of the Community and local Shires with administration and coordination support from the Company. Several meetings have been held to date, and feedback has been positive. Outside of the CCG, MZI remains active in its engagement with the community and landowners surrounding the Keysbrook Project.

#### Project Schedule

Based on the EPC contract with GR Engineering, first production is planned 52 weeks from a decision to proceed with the project, ramping to full production within 6 weeks.

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#### About MZI Resources

MZI Resources Ltd (ASX: MZI) is a mineral sands company focusing on the high value minerals zircon, rutile and leucoxene. It has mineral sands projects in the Northern Territory and Western Australia.

The Company mined the Lethbridge West deposit on the Tiwi Islands in 2010 and Lethbridge South deposit in 2012.

MZI's exploration success at Kilimiraka in the South West corner of Bathurst Island in the Tiwi Islands identified a substantial Inferred resource of over 890,000 tonnes of Heavy Mineral. This large resource has the potential to provide a long life mine. The Company plans to complete further drilling and commence feasibility studies in 2014.

The Company has an advanced zircon / leucoxene rich mineral sands project at Keysbrook in the south west of Western Australia. The two shires over which the deposit is situated have given the project Development Approvals and Extractive Industry Licences. These follow the Environmental Approval previously granted by the Western Australian Minister for Environment. MZI plans to start construction at Keysbrook in 2014 and commence operations in 2015.

MZI's strategy is to be a specialised supplier of high grade zircon, rutile and leucoxene to the nearby Chinese and other world markets. The company has targeted zircon, rutile and leucoxene as high value mineral sands products with strong demand fundamentals. Zircon is primarily used to produce ceramic and porcelain products with demand driven by global urbanisation trends, particularly in countries such as China and India. Rutile and leucoxene are used to produce titanium pigment for paint and plastics as well as titanium metal and flux for welding electrodes.

# APPENDIX

## JORC Mineral Resources

### Keysbrook Project - Mineral Resources (above a 1% THM cut-off grade and below a 20% slimes grade)

Classification	Mineral Resource as at 28 February 2013		
	Million Tonnes	THM grade %	Slimes %
Measured	34.1	2.6	8.7
Indicated	33.2	2.2	7.6
Inferred	11.6	2.6	10.5
Total	78.9	2.5	8.5

### Kilimiraka Project – Mineral Resources (above a 1% THM cut-off grade)

Category	Tonnes (Mt)	Heavy Mineral Grade (%)	Heavy Mineral (kt)
Inferred	56.2	1.6%	894
Total	56.2	1.6%	894

#### Competent Persons Statement

The information in this report which relates to Mineral Resources is based upon information compiled by Mrs Christine Standing (in relation to the Keysbrook Project) who is a Member of the Australasian Institute of Mining and Metallurgy and Mr John Baxter (in relation to the Kilimiraka Project) who is a Member of the Australasian Institute of Geoscientists. Mrs Standing is an employee of Optiro Pty Ltd and Mr Baxter is a Consulting Geologist, both have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2004 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mrs Standing and Mr Baxter consent to the inclusion in the report of a summary based upon their information in the form and context in which it appears.

## JORC Ore Reserves

### Keysbrook Project – Ore Reserve statement as at 17 October 2012

Classification	Ore Million tonnes	In-situ THM tonnes	THM grade %	Magnetite %	THM Assemblage			
					L70 %	L88 %	Zircon %	Other %
Proved	23.0	610,000	2.7	0.26	27.8	46.6	14.6	10.8
Probable	2.8	68,000	2.5	0.26	27.4	46.5	15.0	10.8
<b>Total</b>	<b>26.0</b>	<b>670,000</b>	<b>2.6</b>	<b>0.26</b>	<b>27.8</b>	<b>46.6</b>	<b>14.6</b>	<b>10.8</b>

**Note:** L70 and L88 in the THM assemblage equate to the two Leucoxene products containing 70% TiO<sub>2</sub> and 88% TiO<sub>2</sub>.

#### Notes accompanying the Ore Reserve Statement:

- Ore Reserves are based upon a cut-off grade of 1.0% THM and Mineral Resource material containing more than 20% slimes have been excluded from the Ore Reserve estimation.
- The Ore Reserves are based upon a Leucoxene 70 price of US\$352 per tonne, a Leucoxene 88 price of US\$1,166 per tonne and a Zircon price of US\$1,777 per tonne.
- Mineral Resources have been reported as inclusive of Ore Reserves.
- The Total Heavy Mineral (THM) assemblage is reported as a percentage of in-situ THM content.
- Tonnes and grade data have been rounded to two significant figures. Discrepancies in summations may occur due to rounding.
- This Ore Reserve statement has been compiled in accordance with the guidelines of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code – 2004 Edition).

The information in this report which relates to Ore Reserves have been compiled by Mr Andrew Law of Optiro Pty Ltd, who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Law has sufficient experience in Ore Reserve estimation relevant to the style of mineralisation and type of deposit under consideration to qualify as a Competent Person as defined in the 2004 Edition of the Australasian Code for Reporting of Mineral Resources and Ore Reserve. Mr Law consents to the inclusion in the report of the matters compiled by him in the form and context in which it appears.