Smithers Boston Conference Robert Gibney – GM TiO2 Sales Iluka Resources Limited (ASX:ILU)



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This document contains non-IFRS financial measures including cash production costs, non production costs, Mineral Sands EBITDA, Group EBITDA, Iluka management considers these to be key financial performance indicators of the business and they are defined and/or reconciled in Iluka's annual results materials and/or Annual report. Non-IFRS measures have not been subject to audit or review.

All figures are expressed in Australian dollars unless stated otherwise.

#### Iluka's Product Portfolio





#### Titanium

High grade titanium feedstocks for chlorination High purity titanium feedstocks for welding consumables Low Sn titanium feedstocks for high grade titanium metal production (e.g. Aerospace)









## High Grade Titanium Dioxide Supply/Demand



- · Supply-demand overlaid with swing capacity not requiring additional mine investment
- Subject to price rises inducing brownfields investment, the high grade market has sufficient supply capacity to meet demand to 2019
  - This idle capacity has existed for five years, with major producers exhibiting supply discipline
- Between the three major producers, there is sufficient capacity and feedstock supply to fill the emerging gap
- If all potential suppliers enter the market, the high grade market would have ample supply capacity
- Highlights importance of Iluka's strategy to secure offtake for Cataby project



This slide should be read in conjunction with the disclosure in respect of forward looking statements on slide 2 Source: Iluka supply and TZMI demand August 2017

### **Global Mineral Sands Production**

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While ilmenite is the largest mineral by volume, Zircon, Rutile and upgraded feedstock such as SR provide the value

![](_page_6_Figure_3.jpeg)

All titanium feedstock volumes in TiO2 units Source: Iluka and TZMI

\* 2016 product volumes and 2016 industry average prices

#### Valuable Heavy Mineral Decline

![](_page_7_Picture_1.jpeg)

#### Global Mineral Sands Resources Assemblage

![](_page_7_Figure_3.jpeg)

ige %	Iluka's assessment of industry ore bodies										
,	Trash component in heavy mineral grade increasing										
%	Rutile and zircon assemblage falling										
, D	Industry challenge										
, D	<ul> <li>Need technical solutions for unconventional ore bodies and product specifications</li> </ul>										
	Exploration to find better ore bodies										
, D	Achieving prices that maximise ROI										
, D	Without incentivising substitution and thrifting										

#### New Project Supply Challenges

![](_page_8_Picture_1.jpeg)

Unconventional deposits requiring technical solutions (eg. fine minerals, depth, product quality)

Zircon and rutile typically induced as by-products of ilmenite projects

Limited high zircon and rutile assemblage projects

**Higher unit costs** due to grade, distance to infrastructure and other factors

Iluka evaluates many projects and will remain disciplined in allocating capital.

In a tightening market, new projects may progress despite challenges.

Higher sovereign risk locations

#### **Business Focus**

![](_page_9_Picture_1.jpeg)

![](_page_9_Picture_2.jpeg)

![](_page_9_Picture_3.jpeg)

Operations and Projects
 Exploration Office
 Marketing and Distribution
 Other Assets (Mining Area C)
 Corporate Office

#### Iluka's Asset Base

![](_page_10_Picture_1.jpeg)

![](_page_10_Figure_2.jpeg)

![](_page_10_Figure_3.jpeg)

The company is a major producer of zircon and high-grade titanium dioxide products.

### Project Updates – Cataby and SRL

![](_page_11_Picture_1.jpeg)

![](_page_11_Figure_2.jpeg)

## Synthetic Rutile (SR)

![](_page_12_Picture_1.jpeg)

![](_page_12_Picture_2.jpeg)

- \$35 million spend
- 7 week shutdown for MMO

- Two SR kilns located at Capel, 122 miles south of Perth
  - SR 2 currently running at full capacity, SR 1 idle
  - Products include:
    - SR Premium 91.5% TiO<sub>2</sub>
    - SR Standard 89.5% TiO<sub>2</sub>
    - Activated Carbon
- SR 2 Kiln:
  - Capacity of 210ktpa SR and 20ktpa Activated Carbon
  - Record run of 5 years between last Major Maintenance Outage (MMO)
  - Ilmenite feedstock from internal and external sources
  - Cataby mine will feed SR 2 beginning in 2Q19 following MMO shut
- SR 1 Kiln:
  - Capacity 110ktpa SR
  - Currently idled

![](_page_12_Picture_19.jpeg)

## Activated Carbon (AC)

![](_page_13_Picture_1.jpeg)

![](_page_13_Picture_2.jpeg)

- Unique activation process
- High quality
- Universal applications

- High quality coal based AC produced from SR2 operations
  - Iluka AC products certified in Europe and USA (NSF & EN standards)
    - Potable Water
    - Food decolourisation
    - Industrial applications
- · Channel to market through bulk sales to major AC manufacturers and distributors
- Significant global supply issues in 2018
  - China enforces environmental laws restricting production
- Iluka focus on AC sales and marketing has developed additional opportunities
- Iluka has announced a range of price increases for 2019
  - Prices increasing from Jan 1 ~20%
  - High quality products on allocation
- AC sales deliver additional value lowering SR production cost

![](_page_13_Picture_19.jpeg)

### Cataby

![](_page_14_Picture_1.jpeg)

![](_page_14_Picture_2.jpeg)

- DFS completed 2016
- Development approved December 2017
- Est. capex \$250-\$275 million
- 18 month construction period
- First production planned 2019

- Large, chloride-ilmenite rich deposit, 110 miles north of Perth
  - Underpins continued synthetic rutile production at Capel
  - Offtake secured for 85% of SR production for minimum four years
  - Conventional mineral sands development
- · All works progressing on-time and on-budget
  - Accommodation and power distribution nearing completion
  - Concentrator relocated from Eneabba, reassembly underway
  - Mining unit construction well advanced
  - Overburden removal underway
- Average annual production over 8.5 year mine life:
  - 200kt synthetic rutile (from ilmenite)
  - 30kt natural rutile
  - 50kt zircon
  - Potential to add four years to life of mine

![](_page_14_Picture_22.jpeg)

### Sierra Rutile Expansion Profile

![](_page_15_Picture_1.jpeg)

- · Sierra Rutile expansion occurs across three mining fronts
- Initial Sembehun development includes infrastructure early works for road and bridge construction
- · Mine moves from Lanti and Gangama are required to maintain expanded production levels

Concentrator <sup>1</sup>	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
DM1	Lanti dry 500-600tph Lanti dry 1,000-1,20				)00-1,200tpl	n		Sembehun 1,000-1,200tph				
DM2	Gangama 500-600tph			Gangama 1,000- 1,200tph			Sembehun 1,000-1,200tph					
DM3	DM3 Plant relocation		tion			Sembehun 1,000-1,200tph						
Near Mine Exploration Potential <sup>2</sup>												

Note: Mining rates dependent on spiral plant feed

- 1. Rates refer to tonnes per hour (tph) ore feed rate and are an indicator of capacity of each concentrator and not expected production.
- Extension of DM1 + DM2 dependent on further study of near mine exploration potential. DM1 Production to 2027 includes approximately 12% Inferred Mineral Resource and 6% Exploration Target. DM2 Production to 2027 includes 5% Inferred Mineral Resource.
- While the Exploration Potential is hosted in the same geological setting as historically mined material, the production forecast from near mine exploration potential is based on a number of assumptions and limitations with the estimated grade and quantity being conceptual in nature. It is uncertain if future exploration will result in the estimation of a Mineral Resource or Ore Reserve.
- The Ore Reserves, Mineral Resources and Exploration Targets underpinning the Production Targets have been signed—off by the Competent Person in previous releases to the ASX: Updated Mineral Resources and Ore Reserve Statement, dated 20 February 2017 and Sembehun Mineral Resource Increase and Pejebu Exploration Target, Sierra Rutile, dated 15 August 2018.
- 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 resources or that the production target itself will be realised.
- The potential quality and grade of an exploration target is conceptual in nature, there has been insufficient exploration to determine a mineral resource and there is no certainty that further exploration work will result in the determination of mineral resources or that the production target itself will be realised.

### Sierra Rutile – Near Mine Exploration

![](_page_16_Picture_1.jpeg)

Near Mine Exploration Target<sup>1</sup> Consolidation and interrogation of historical SRL drilling data highlighted the Pejebu Exploration Target

Pejebu Exploration Target is 15 – 20 Mt HM at 0.9% to 1.1% in situ rutile grade

Potential 135 to 220 thousand tonne in situ rutile

Adjacent to the historical Pejebu dredge path

Drilling in progress, Mineral Resource Modelling in Q4

**Near Mine Resource Development** Drilling in progress to upgrade confidence of existing ML1 Mineral Resources

Drilling in progress at Gangama North and West, Taninahun and Ndendemoia Prospects

Adjacent or proximal to current production areas

Conventional material that may feed DM1 and DM2

Updated Mineral Resource estimation in Q4 Updated Mineral Resource reporting expected early 2019

#### Additional feed to DM1 and DM2 may delay mining unit relocation to Sembehun

<sup>1</sup> Refer to ASX Release "Sembehun Mineral Resource Increase and Pejebu Exploration Target, Sierra Rutile" 15 August 2018. The potential quantity and grade is conceptual in nature, there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.

Gangama

Prospect Locations

HM Reserves Mined Out HM Resources

SR Mining Lease

244416v02

![](_page_16_Figure_14.jpeg)

![](_page_17_Picture_0.jpeg)

![](_page_17_Picture_1.jpeg)

# 2018 Titanium Feedstock Market

![](_page_18_Picture_1.jpeg)

![](_page_18_Figure_2.jpeg)

- Positive conditions in downstream pigment market (90% of demand)
- Pigment prices up 55% from market low (Oct 2015)
- Pigment pricing now showing signs of slowing with latest (Q4) price rise of \$60-\$80/t announced
- Feedstocks prices traditionally lag pigment prices by 6-12 months
- Rutile prices now up 44% from market low (Q4 2016)

![](_page_19_Picture_0.jpeg)

![](_page_19_Picture_1.jpeg)

1. Feedstock supply will remain constrained in the near to medium term

2. Iluka investing heavily in new projects to meet customer demand – most since 2008

3. Challenge for Iluka and industry – sustainable returns

![](_page_20_Picture_0.jpeg)

#### For more information contact:

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![](_page_20_Picture_3.jpeg)