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# Key Messages

Supply / Demand Fundamentals	<ul> <li>Inventory depletion across zircon and high grade titanium feedstocks</li> <li>Zircon market viewed to be broadly balanced in 2019</li> <li>High grade titanium feedstock market tight with limited feedstock inventory through chain</li> </ul>		
Grade decline and new project challenges	<ul> <li>Grade decline and maturing ore bodies impacting the industry</li> <li>Disciplined investment approach required for new projects to maintain supply</li> </ul>		
Addressing the deficit	<ul> <li>Industry response to the deficit limited thus far</li> <li>Iluka's response in the short term: release inventories and flex supply</li> <li>Longer term response by Iluka: investment in projects</li> </ul>		



# Iluka Resources Limited (ASX:ILU)

- ASX-listed (ASX:ILU) mineral sands company, ~A\$4bn market capitalisation
- Largest producer of zircon and leading producer of high-grade titanium dioxide feedstocks
- Operations in Australia and Sierra Leone
- Royalty asset BHP Mining Area C, Western Australia
- Customer focused global marketing presence with dedicated product sales teams
- Responsible industry leader



### **Asset Profile**





# **Iluka's Approach**

# **DELIVER SUSTAINABLE VALUE**

Disciplined capital allocation	Preserve and advance growth opportunities	Creation of a sustainable operating environment
lluka's capital allocation framework prioritises funds for investment where financial criteria and strategic rationale are met  Return to net cash in two years since debt financing acquisition of Sierra Rutile  Paid 40% of free cash flow in dividends in 2018.	Iluka's position within the industry and the wider community requires a holistic view to project development and execution  Cataby project development  • advanced when new SR feed source required  • offtakes secured underpinning return on investment  Ambrosia mine move  • accelerated move to Ambrosia deposit, smoothing production profile as zircon supply deficit emerges  Sierra Rutile expansion projects  • increasing rutile production  Other growth projects including:  • Fine Minerals project  • Sri Lanka (PQ)  • Balranald  • SR1 kiln	Exhibit leadership and discipline to support a transparent, stable and sustainable operating environment for:  • the industry • our customers • our stakeholders • our people  while optimising returns for our shareholders



# **2018 Results and Key Features**

Financials	Underlying Group EBITDA of \$600 million, up 67% year-on-year (2017: \$361 million) NPAT of \$304 million (2017: loss of \$172 million)	
Strong cash flow Operating cash flow of \$594 million Free cash flow of \$304 million		
Net cash position	Achieved net cash position of \$2 million (31 December 2017: net debt \$183 million)	
Dividend	Final dividend of 19 cents per share, fully franked Total full year 2018 dividend of 29 cents per share (40% of free cash flow)	
Mining Area C royalty	Mining Area C royalty income of \$56 million BHP's South Flank project 21% complete, with first ore expected 2021	
Operational performance	Key projects progressing on time and within budget Strong production performance from Australian Operations Operational challenges experienced in Sierra Leone – plans being implemented to drive improvement	
Mineral sands revenue	Mineral sands revenue of \$1,244 million, up 22% year-on-year (2017: \$1,018 million) Mineral sands EBITDA of \$545 million, up 81% year-on-year (2017: \$301 million)	
Zircon Market  Zircon¹ prices up 41% year-on-year  Maintained high levels of zircon sales of 379kt (2017: 380kt)		
High Grade Titanium Feedstock Market	Rutile <sup>2</sup> prices up 21% on 2017 SR2 kiln achieved highest annual synthetic rutile production of 220kt	

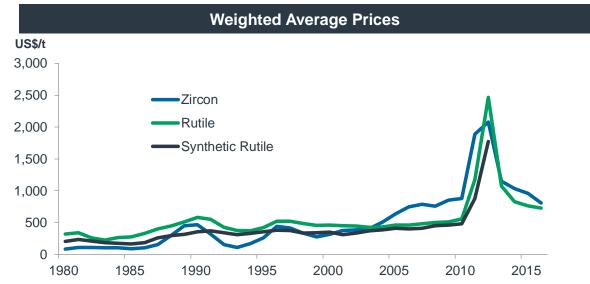


### **Industry Context**

### Industry experienced significant pricing volatility at start of decade...

- Post-GFC stimulus increased demand for zircon and TiO<sub>2</sub>
- Zircon prices went from ~US\$800/t US\$2,500/t
- Zircon was assumed to be price inelastic
  - zircon price <5% of cost of tile</li>
- Resulted in 200kt of zircon demand destruction through thrifting and substitution

- · Improvement in market evident towards end of 2016 due to
  - producer supply shortages in zircon reversed downward price trend
  - pick-up in pigment demand on low inventories
  - pigment producers gained pricing power
  - subsequently providing pricing power to pigment producers







### **Supply-Demand Fundamentals - Zircon**

Iluka sees the zircon market as being broadly balanced during 2019...

### **Global Supply**

- Significant inventory depletion in recent years
- 2016-18 supply = production + inventory
- Existing producers' mines are mature and grade decline imminent
- 2019 market expected to remain broadly balanced
- Indonesia (swing producer) and Iluka ZIC balancing market
- minor new supply (concentrate)
- a number of smaller operations coming offline

### **Global Demand**

- H2 2018 saw slight easing in tightness
- reduced output from Chinese tile industry (environmental regulations)
  - importing more from other regions
- solid demand in sanitary and refractory
- Iluka sales not affected
- less speculation evident in opacifier pricing
- Iluka's customers have positive outlook ahead
- customers well positioned for 2019
- longer term demand growth outpacing supply

... structural deficit continues to emerge in years ahead



### **Industry Response**





- High grade titanium feedstocks limited response to shortage
- Zircon aside from Iluka, industry response to date limited to Kalimantan swing producers

### **Indonesian Zircon Exports – Total and to China, 2010 to 2018**



Source: Iluka, TZMI, Export Genius

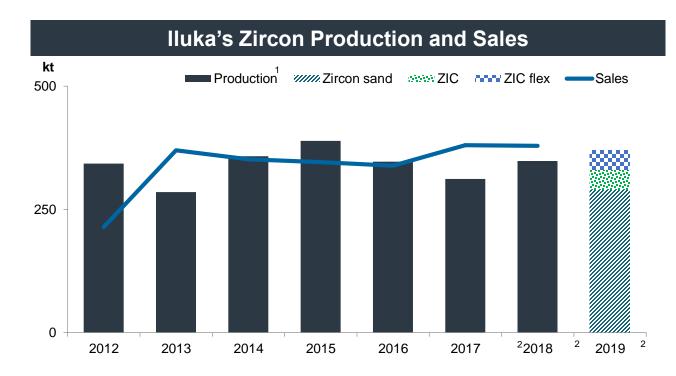
- Inducement price for Kalimantan exports generally regarded to be ~US\$1,400/t
- Indonesian exports in Q4 2018 at ~80ktpa rate



### Iluka's Response

### Iluka's response to tight market conditions<sup>3</sup>

- Guided 2019-2021 zircon production of ~335ktpa<sup>4</sup>
  - Cataby project tonnes available in 2019
  - early Ambrosia mine move (smoothing production)
  - Incl. ~20% zircon in concentrate (ZIC) from multiple sources
- Potential for additional ZIC production ~40-50ktpa from Narngulu
- Gap filled by inventory release in 2017 and 2018
- Inventories at normal levels in 2019



<sup>4.</sup> The Production Target is underpinned by Ore Reserves as stated in a release to the ASX on 21 February 2017 "Updated Mineral Resource and Ore Reserve Statement' and as updated in the Ore Reserve and Mineral Resource Statement included in Iluka's 2018 Annual Report. The production target is underpinned by 88% Proved and 12% Probable Ore Reserves. Iluka confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all the material assumptions and technical parameters underpinning the Production Target continue to apply and have not materially changed.



<sup>1.</sup> Production denotes finished zircon product (includes ZIC)

<sup>2019-2021</sup> production guidance of 335ktpa

All outlook production figures are expected annual average 2019-21, subject to market conditions

### ZIC Production Potential<sup>1</sup>

- Produced by upgrading / blending current and stockpiled MSP byproduct streams
- Simple reclaim with minimal processing and low cost
- Match production / sales to market

#### Iluka's ZIC sources

- US: almost depleted
- South west: +2 years remaining
- Sierra Rutile: ongoing for life of mine
- Narngulu: ongoing
  - stockpile of ~600kt
  - 2019 guided production of 40ktpa
- Provides flex of up to ~50ktpa





### **Supply-Demand Fundamentals – High Grade Titanium Feedstocks**

High grade feedstock supply impacted by production outages...

### **Global Supply**

- Production disruptions reduced supply throughout 2018
  - Some still unresolved
- Limited rutile inventory reported through chain
- Iluka rutile sales limited by production
- Downstream concerns for feedstock availability in 2019 and beyond

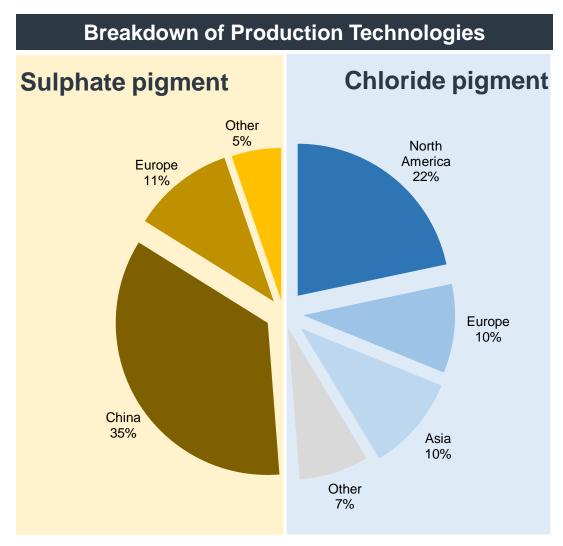
### **Global Demand**

- Many pigment plants at high operating rates
- Reduced pigment prices in some regions
  - Follows period of strong growth
- Pigment producers understood to be rebuilding inventory
  - Supporting feedstock demand
- Long term growth of chloride pigment capacity exceeding feedstock supply
- Resulting in increased demand for high grade feedstocks

... at a time where long-life, quality high grade deposits are limited



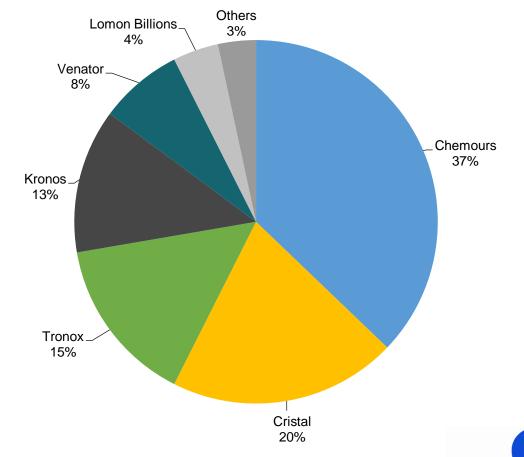
### **Titanium Pigment Industry Summary**



2018 global production = 6.2mt

Source: TZMI and Iluka

### **Major Chloride Pigment Producers**

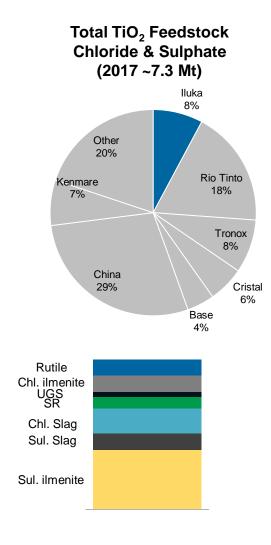


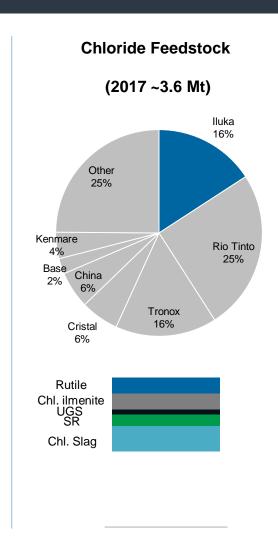
2018 global chloride production = 3.0mt

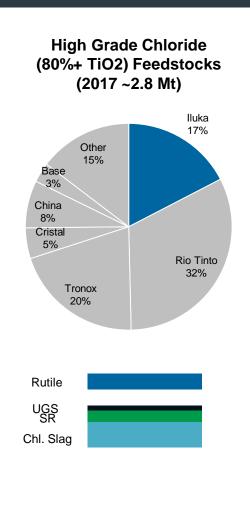
ILUKA

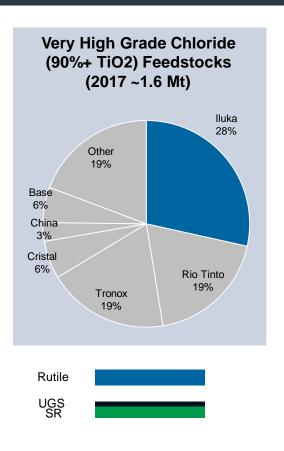
# Market Position Strongest in Very High Grade













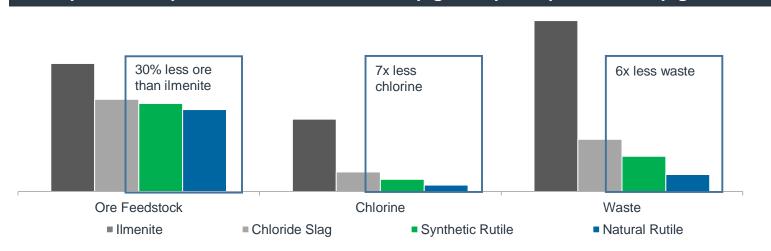
### High Grade Titanium Feedstock Advantage



- Natural rutile and synthetic rutile have a higher titanium grade than other feedstocks
- Advantages in pigment production
  - lower ore tonnes required
  - lower chlorine input cost
  - lower waste generation (environmental and cost benefits)
- Iluka's high grade products considered to have high 'value in use' for pigment producers

Feedstock	TiO₂ %	Origin	Chloride or Sulphate pigment process
Ilmenite	48% - 55%	Naturally occurring	Both
Leucoxene	65% – 90%	Naturally occurring	Chloride
Titanium Slag	88% - 94%	Upgraded	Both
Synthetic Rutile	88% - 94%	Upgraded	Chloride
Rutile	92% - 96%	Naturally occurring	Chloride

#### Input and outputs based on feedstock of pigment plant, per tonne of pigment





Use in





# **Addressing the Deficit for Customers**



- Zircon market tightness eased toward end H2 2018; underlying structural deficit remains
- Iluka can continue to release additional ZIC to assist customers / balance market
- Project initiated to scope SR1 re-start to supply high-grade synthetic rutile
- Will continue to apply lessons of the past in product pricing strategy
- Executing projects for short term
- Progressing pipeline of projects for medium to longer term

	Project	Zr	R	llm¹	SR
	Ambrosia mine move	✓		<b>✓</b>	
Execute	Cataby development	✓	<b>✓</b>	<b>✓</b>	<b>✓</b>
(projects underway)	ZIC release	✓			
	Lanti and Gangama expansions		✓	<b>√</b>	
	SR1 restart				✓
Evaluate	Balranald	✓	✓	✓	
(projects in scoping /	Sembehun		✓	<b>✓</b>	
PFS / DFS)	Fine Minerals <sup>2</sup>	<b>√</b>	✓	✓	
	Other deposits <sup>3</sup>	<b>√</b>	<b>√</b>	✓	<b>✓</b>







### **Cataby Development Commissioning**

#### **Project enters commissioning**

- · Core construction activities complete
- Wet commissioning commenced late Q4 2018
- · Ore is stockpiled in front of the plant in preparation for commissioning
- Production of HMC expected in Q1

#### **Summary**

- 8.5 year mine life, with potential to extend a further 4 years<sup>3</sup>
- Offtake agreements secured for 85% of SR production, minimum 4 years
  - Underpinning financial returns of the project
- · Expect production at annualised rates from mid year



Production Outlook		2019- 2022 <sup>1</sup>
Zircon	ktpa	60
Rutile	ktpa	35
Synthetic Rutile <sup>2</sup>	ktpa	200
Total Z/R/SR	ktpa	295
Ilmenite	ktpa	440

- 1. Average production
- 2. Synthetic rutile produced at SR2 kiln, fed by Cataby and externally sourced ilmenite
- 3. Subject to approvals and land access grants



# **Ambrosia Early Mine Move**

Assisting Iluka to meet Group zircon production targets of ~335 thousand tonnes per annum over the next three years<sup>1</sup>

- Iluka Board approved accelerated mine move to Ambrosia in 2018
- The mine move is expected to be completed by October 2019 (previously 2022)
- Capital expenditure of ~\$35 million in 2019
  - deferred capital of ~\$20 million cost over 2020-21 for tailings management
- Expect similar production levels to current operations in early years of Ambrosia
- Ambrosia mining supplemented with heavy mineral concentrate stockpile from Jacinth



#### **Ambrosia Preparatory Works**

- · Haul road complete and pre-strip has commenced
- Construction workforce mobilised in January 2019
- · Project is tracking well on schedule and budget



# Sierra Rutile Expansion Projects

#### Lanti dry and Gangama - Expansion Projects

- Project to double capacity to 1,000-1,200 tonnes per hour underway at each of Lanti dry and Gangama
- Construction of second concentrator at Gangama 40% complete with earth-moving fleet delivered and commissioning scheduled mid 2019
- Lanti dry mining unit fabrication is complete and will be shipped to site late Q1 2019
- · Lanti concentrator, commissioning scheduled Q3 2019

#### Mineral separation plant upgrade and Sembehun development

- MSP upgrade required to meet additional capacity from Sembehun development and provide additional benefits from improvements to safety, operational and metallurgical efficiencies
- Value optimisation studies underway to consider optimum Sembehun development approach and MSP configuration. Scheduled to conclude alongside DFS in H2 2019



Production Outlook	2019	
Zircon	kt	5
Rutile	kt	150
Total Z/R	kt	155
Ilmenite	kt	65



# Other Projects



# Fine Minerals Project Murray Basin.

Victoria

- Zircon and rare earths project
- PFS commenced in August 2018 with completion of test pit ahead of schedule
- Ore transported for testing and preparation of customer samples
- Industry, competitor and market analysis underway

#### Balranald Murray Basin, New South Wales

- A drilling programme to provide more detailed understanding of the deposit mineralisation has been completed and the results are being assessed
- Final trial designed to determine whether the underground mining and backfilling technology is effective in a continuous mining and processing environment
- Decision on timing of trial to be made later this year

#### Puttalam (PQ) Sri Lanka

- Large sulphate ilmenite deposit, 170km from Colombo
- PFS largely complete
- Recent political uncertainty will delay progress on achieving certainty on fiscal arrangements

#### SR1 Restart Capel, Western Australia

- Scoping study commenced on restart of SR1 synthetic rutile kiln
- Potential to add ~120ktpa of synthetic rutile production
- Subject to relevant approvals



### **New Project Supply Challenges**

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

Higher sovereign risk locations

Many projects are evaluated by Iluka

Disciplined capital allocation remains a key focus



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