Rio Tinto

Notice to ASX

Aluminium – investor roadshow

11 October 2018

The attached presentation will be given by Alf Barrios, chief executive – Aluminium at investor briefings this week.

The presentation slides will also be available at www.riotinto.com/investors/presentations

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Aluminium

Alf Barrios

Chief executive, Aluminium

October 2018

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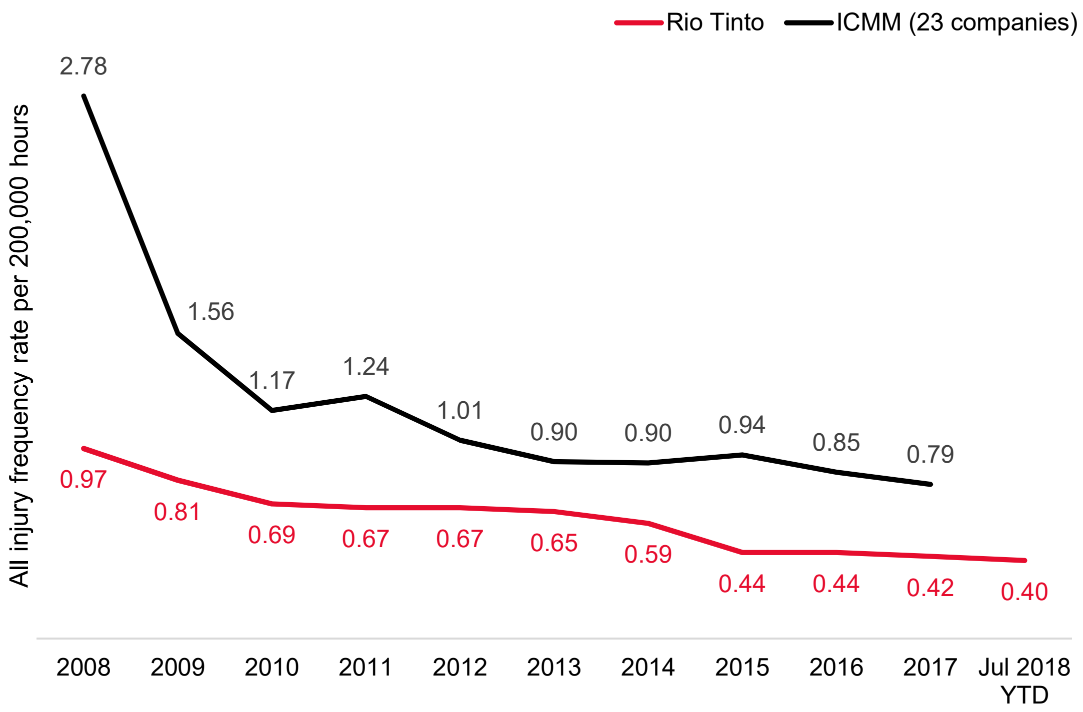
Safety and health come first

Continuing history of improvement in AIFR



Fatality at Rio Tinto Fer et Titane in April 2018

Fatal assault on a security contractor at Richards Bay Minerals in July 2018

Fatality at Paraburdoo Iron Ore mine in August 2018

Eliminating fatalities through the Critical Risk Management programme which continues to be embedded, including controls for critical health risks

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Preventing catastrophic events through our focus on **process safety** and the identification and management of controls for major hazards

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Reducing injuries through targeted hazard elimination campaigns

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Ongoing focus on mental health, **wellbeing** and fatigue management

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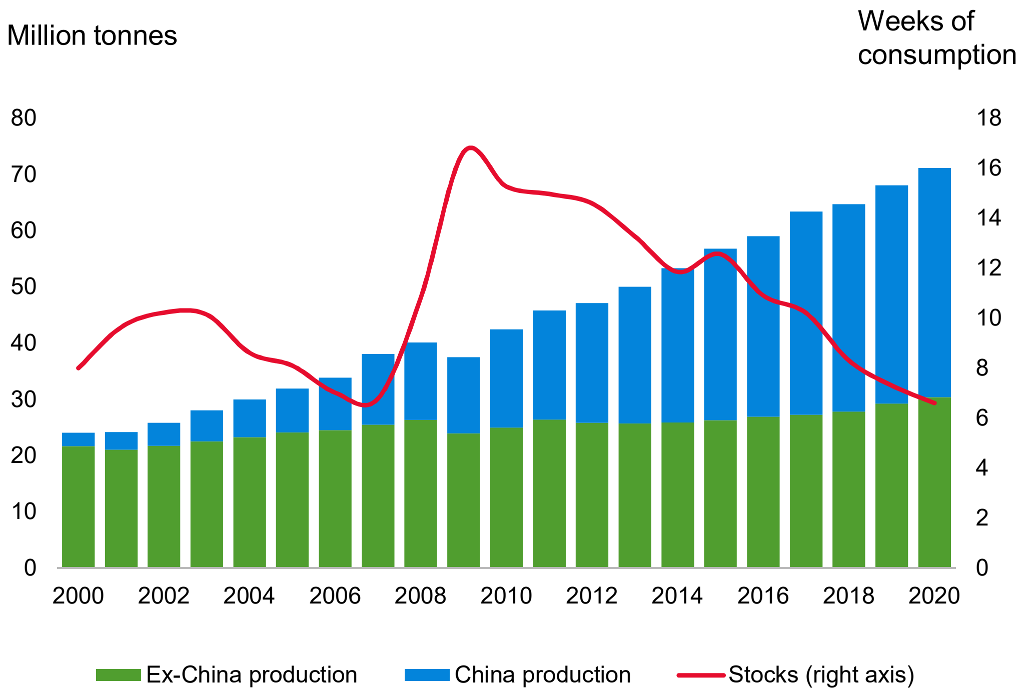
Strong global growth in aluminium

Primary aluminium production and stocks



Aluminium demand growth ~3.2% p.a. next 5 years

- Increased intensity of use in autos in N. America

China expected to be broadly balanced in aluminium in medium to long-term

- And largely self-sufficient in alumina

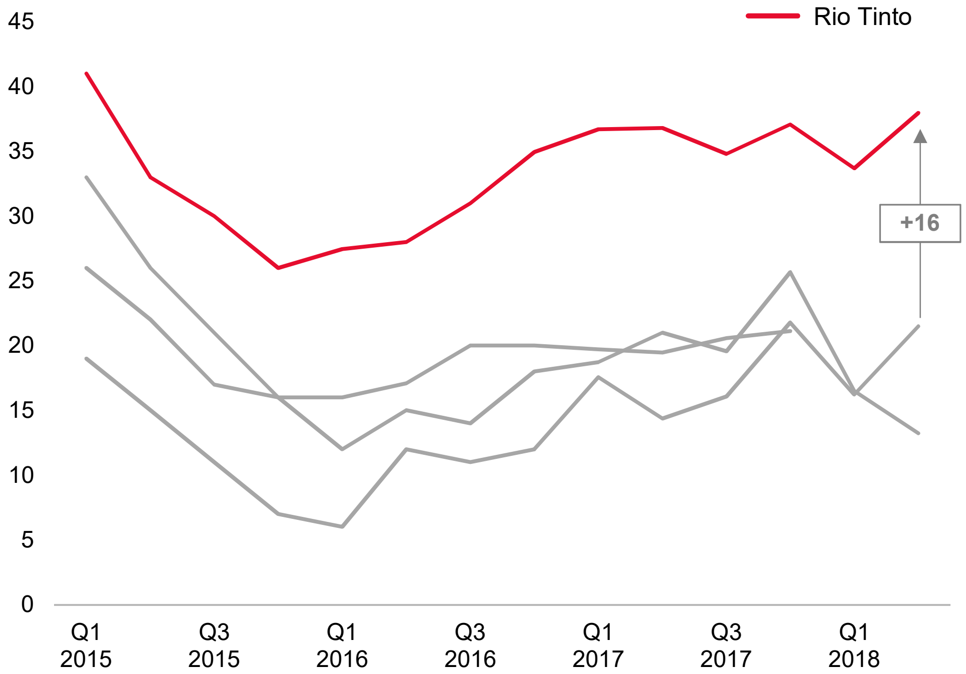
Seaborne bauxite demand driven mainly by China

- Expected depletion of inland bauxite reserves accentuates import needs
- Wide range of scenarios

Source: Rio Tinto Market Analysis, CRU Group

We continue to widen the gap over our competitors

Upstream EBITDA margins (per cent)



Margin gap: portfolio quality and performance delivery

EBITDA margin increase to 38%*

Cash cost improvements $1.2bn since end 2012

*Rio Tinto Market Analysis which includes adjustments to externally reported EBITDA margins, trading, procurement and marine revenues to report performance on a comparable basis. Competitors included in the analysis are Rusal, Hydro and Alcoa.

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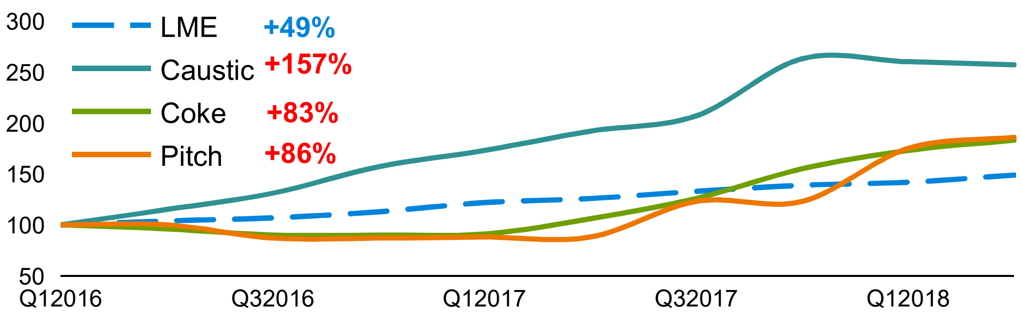
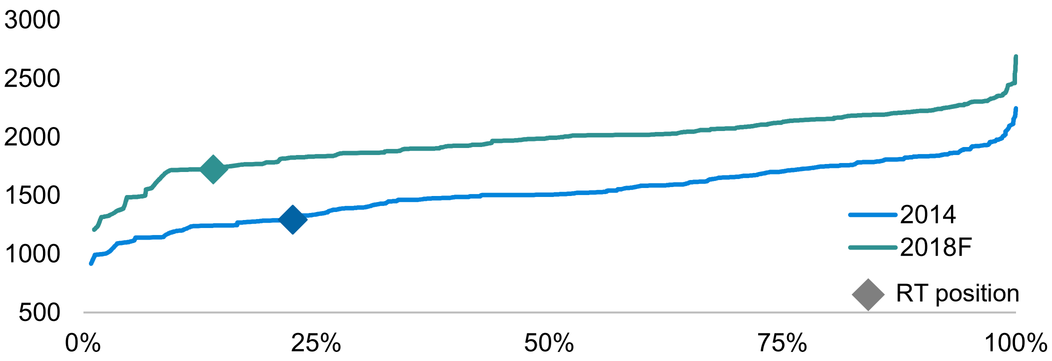
We maintain our low-cost position despite commodity headwinds

Commodity Index (base 2016)



Aluminium cost curve ($/t)



Raw materials & energy lifting cost curve by 16% vs 2017

Costs are expected to stay elevated in 2019

Rio Tinto well placed

- Self-generated hydro power
- 90% own anode production
- 55% own calcination capacity for Canadian assets
- Advantaged bauxite position: proximity to China, supply reliability, high alumina, expandable resource

Raw materials cost headwinds impacted EBITDA by $229m in H1 2018 vs H1 2017

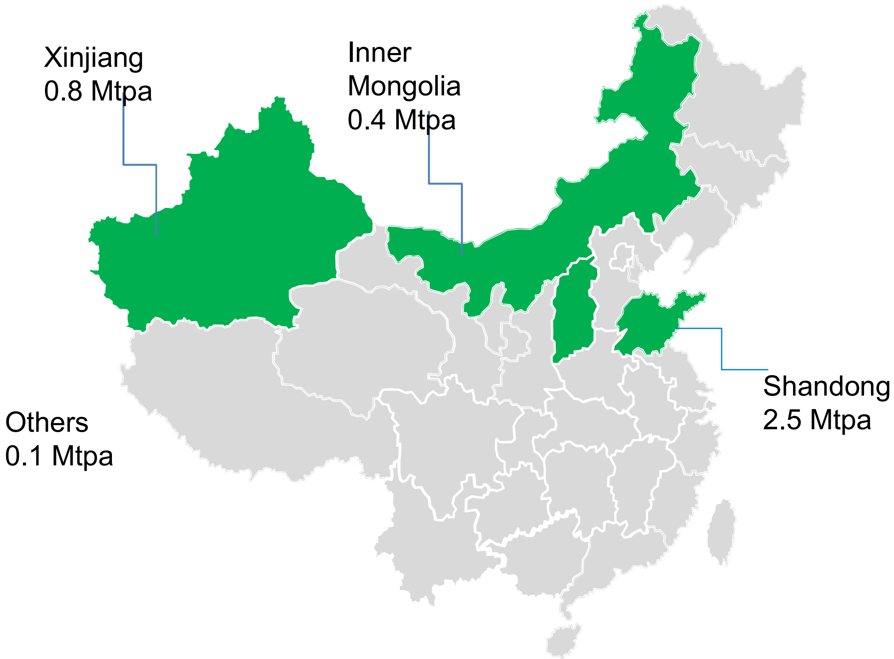
Estimate for full year 2018: ~$400m impact[1] vs 2017

Source: CRU, IHS and Rio Tinto Market Analysis. Aluminium costs include hot metal and cold metal costs net of market and product premiums. Commodity price increases calculated between 1 January 2016 and June 2018

1. Impact attributable to Coke, Pitch and Caustic

China shows determination to curb overcapacity and reduce pollution

Supply-side reform aluminium capacity cuts – 2017/18



Smelting

3.8 Mtpa of illegal capacity removed in 2017 and 2018 (~9% of total)

Further 0.8 Mt capacity cuts from environmental winter policy (2017-18)

Captive Power Plant policy: targets closure of illegal plants built after March 2015, requires plants to pay government taxes and grid charges

- Estimated increase in aluminium costs: ~ $70 - $150/t
- New smelting capacity delayed - total of 1.2 Mtpa projects

Alumina

Environmental winter policy: cuts totalling 4.4 Mt in 2017-18

Bauxite

Environmental enforcement closing inland mines

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Source: *Baiinfo, Aladdiny, Rio Tinto Market Analysis*

Productivity continues to deliver cash

Best Practice | **Partnering with Suppliers** | **Data & Technology** | **Automation**

Bauxite

- Creep
- Rail debottlenecking & payload optimisation
- Mine planning optimisation
- Shipping optimisation
- Equipment utilisation
- Predictive analytics & optimisation in real-time
- Bauxite grade optimisation
- Bauxite integrated operations centre

Alumina

- Creep & asset utilisation
- Energy optimisation
- Bauxite mix optimisation
- Flocculation & additives technology
- Sweetening
- Predictive analytics & optimisation in real time
- Fixed cost compression
- Advanced process control

Aluminium

- Creep
- Automated anode change
- Fixed cost compression
- Advanced process control
- Casthouse utilisation
- Autonomous metal / anode transport
- Aluminium Operations Centre - predictive analytics & optimisation in real-time

Aluminium to deliver additional free cash flow of ~$0.5 billion per year from 2021

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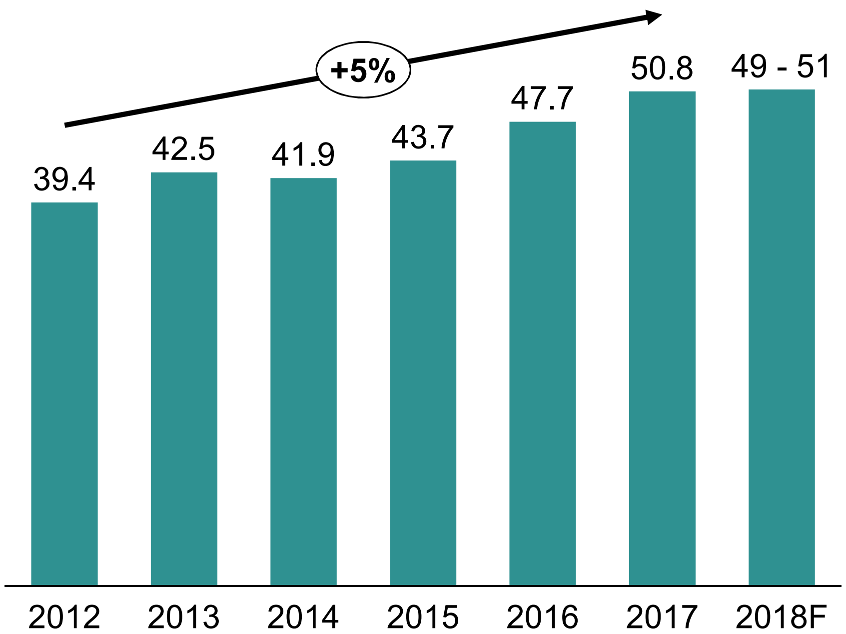
Increasing production in bauxite and alumina

Bauxite production
Million tonnes



Bauxite: Maximising value from existing operations

- Production track record: Weipa 5% p.a. / Gove 11% p.a .
- Optimising grade allocation to maximise customer ViU

Alumina: maximising use of installed capacity

- Production track record: ~3% p.a. since 2012
- E.g. : 5% yield increase at Yarwun driven by low-capital intensity process improvements

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Bauxite: asset performance drives productivity

Debottlenecking the value chain through data analytics (constraint identification / elimination)

- Processing system rates increases for minimal capital expenditure at Gove and Weipa
- Increased HME productivity with increases in fleet payload and utilisation

Mine to Market optimisation across the value chain: volume and product quality

- Integrated Operations Centre allowing real time decision making on ore grade, shipping

Performance improvements: 2018 YTD vs 2016

	Plant rate	Haul truck utilization
Weipa	+7%	+8%
Gove	+43%	+23%

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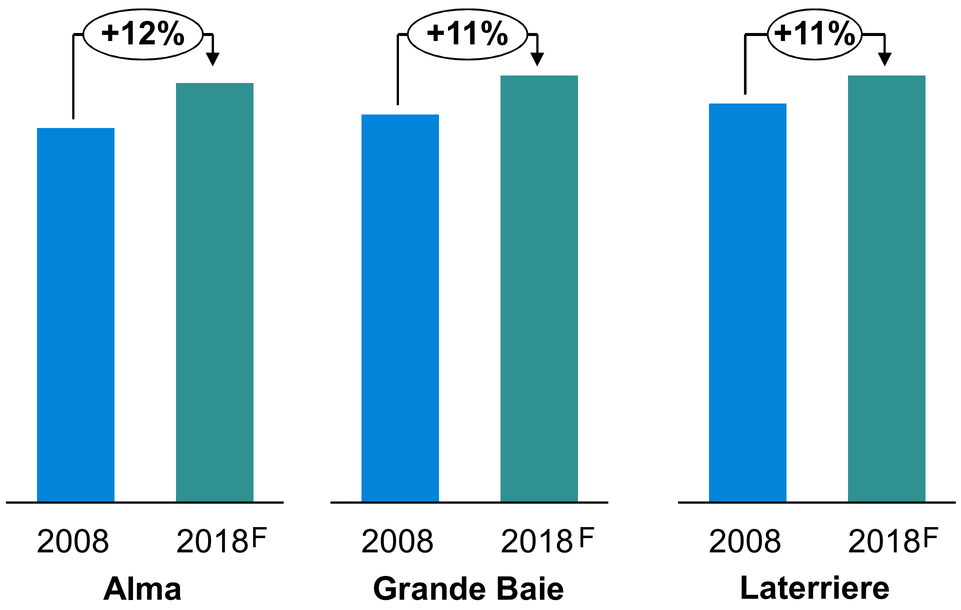
Smelters creeping at 1% per annum, double industry average

Amperage creeping history



Long history of cutting-edge smelter productivity

– Industry-leading technology, expertise and innovation
– Creep innovation the engine of technology productivity

Low capital intensity, high-return investments

– Productivity growth on installed asset base

Canadian Brownfield growth options

– Alma, AP60… value over volume

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Technology, process intelligence and expertise underpin our competitive advantage

Industry-leading technology

AP Technology
APxe low energy consumption
Spent potlining valorisation
Elysis – inert anode technology (in development)

Process intelligence

Advanced control systems
Anode resistivity measurement
Integrated casthouse management system

Skills & expertise

Technology and product development
Academic and industry collaboration
Customer technical partnership

Data analytics, automation and integrated operations drive the next wave of productivity

Data analytics

Anode traceability
Anode spike predictive detection
Asset health monitoring

Automation

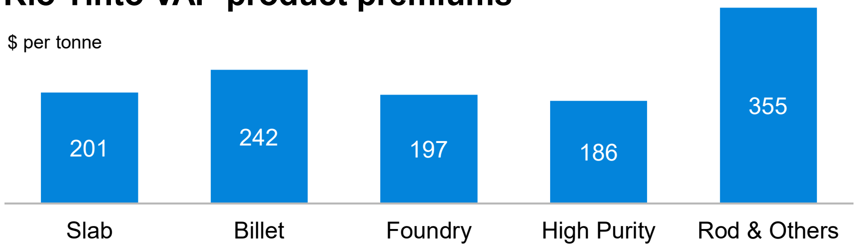
Anode change
Automated Guided Vehicle logistics
Casting process optimisation

Integrated Operations

Real-time process optimisation & integration
Hydropower Control Centre
Operations centres for Bauxite and Aluminium

Enhancing margins through VAP

Rio Tinto VAP product premiums[1]

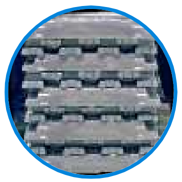


Rio Tinto VAP product mix[1]

Slab
36%

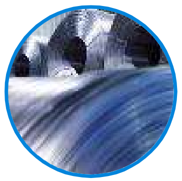
Billet
33%

Foundry
19%



High Purity
6%

Rod & Other
6%



Value added product (VAP) enhances margins

– VAP 58% of portfolio
– Additional revenue \$222 per tonne[1]

Further scope to grow margins through commercial excellence

– Customer partnerships: North American automotive light-weighting
– Market differentiation
  – RenewAl™ low CO_2 aluminium
  – Proximity and reliability
  – Technology and product development
  – Elysis technology and ASI certification[2]

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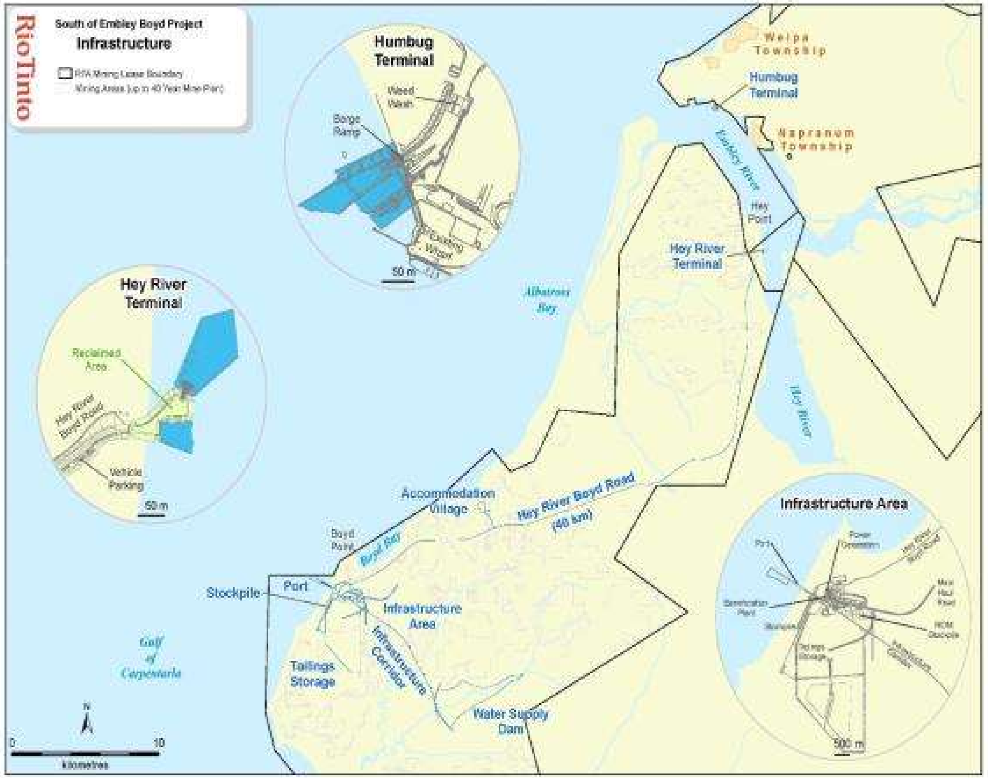
1. H1 2018
2. Aluminium Stewardship Initiative

Amrun ramping up in 2019



Tier 1 investment with low market risks

- 23 Mt total capacity: replaces East Weipa (13 Mt), captures China market growth (10 Mt)
- First quartile cost curve position, low technical risks

First shipment in Q4 2018 with full ramp-up in 2019

Range of expansion options that can be developed in line with market demand

In summary: strong demand outlook, value delivery through productivity and growth options

Aluminium

~$0.5 billion additional free cash flow per year from 2021 …

- Hot metal and bauxite creep
- VAP volume & mix
- Integrated operations
- Value chain optimisation
- Value-in-use optimisation
- Asset productivity

… offsetting raw material headwinds

Strong demand outlook

China supply-side turning point

World-class first quartile assets

Near-term growth from productivity and commercial

Growth options in bauxite and aluminium

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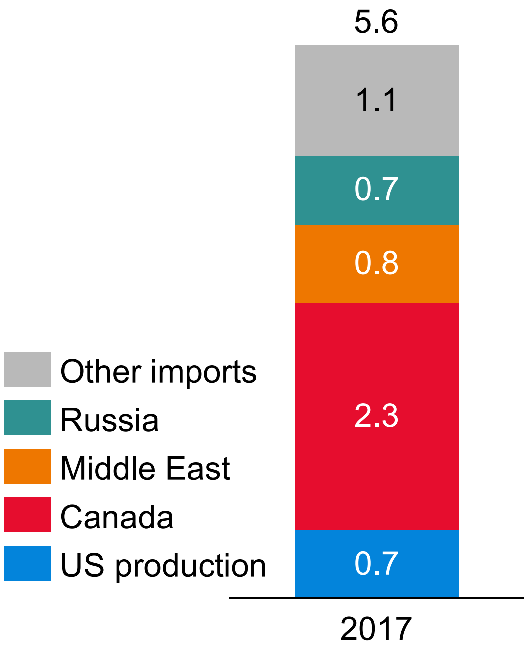
Appendix

Section 232 impact

US total primary metal consumption (Mt)



Tariff providing some support to restarts: 0.6 Mt of capacity restarts announced[1]

- Of which ~0.5 Mt restarted or in progress
- Additional 0.26 Mt idle, could potentially restart[2]
- New capacity unlikely

US primary metal demand expected to grow by 0.3 Mtpa from 2017 to 2020

Metal being priced from Canada at Midwest Premium duty-paid, which reflects 10% tariff[3] from 1 June 2018

1. Hawesville (+150kt), New Madrid (190kt), Warrick (270kt)
2. Mount Holly (+120kt), Wenatchee (140kt)
3. Segmented financial results: Primary Metal revenue will reflect higher realised price incorporating higher LME, higher mid-west premium and increased VAP premium, with EBITDA reflecting operating costs that include an additional cost from the 10% tariff on sales to the US from 1 June 2018.

Relevance of Alunorte curtailment, Rusal sanctions and alumina legacy contracts

Total 2017 Alumina market 133 Mt, of which 60 Mt outside China

- China: net importer 2.9Mt in 2017, net exporter estimate 0.2Mt in 2018

<u>Alunorte</u>: 2017 production: 6.38 Mt (~11% of ex-China volumes)

  - ~60% used for Hydro's own needs (Norway, Albras, Qatalum, Alouette, etc.)
  - 50% curtailed March 1, 2018 (RT covered with volume from Pacific)

<u>Rusal</u>:

- **Aluminium: supplies 15% of world's demand ex-China**
  - 2017: supplied 0. 7 Mt to US (13% of demand), 1.6 Mt to Europe ex-Russia (19% of demand)
- **Alumina: accounts for 6.7 Mtpa, i.e. 13% of ex-China market**
  - 3.4 Mtpa outside Russia: Aughinish (1.9 Mtpa), Ewarton (0.65 Mtpa), QAL (0.8 Mtpa[1])

<u>Legacy alumina contracts</u>

- Supply of ~2.2Mtpa, LME-linked, with bulk of volume with ending dates between 2023 and 2030 (~30% rolled off post-2023).
- $178m negative impact in H1 2018, based on average prices of $2,209/t for LME and $450/t for Alumina over the period.
- ~$100m negative EBITDA impact for every 10% increase in Alumina index price, ~$60M negative impact for 10% decrease in Aluminium LME index. The opposite impact applies if index pricing moves in the other direction.
- $130m negative impact in Q3 2018[2]

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1. 20% ownership 2. Based on average prices of $2,056/t for LME and $512/t for Alumina over the period; legacy volumes in Q3 ~10% higher than quarterly average

Modelling Aluminium EBITDA

EBITDA sensitivity	H1 2018 average price/rate	Impact on FY 2018 underlying EBITDA of 10% price/rate change $m	Estimated impact for full year 2018 vs 2017 $m
Aluminium	$2,209/t	887	
Caustic soda (FOB)	$587/t	31	
Petroleum coke (FOB)	$440/t	32	~$400m ($229m at H1 18)
Green coke (FOB)	$152/t	15	
Pitch (FOB)	$801/t	16	
Coal	$104/t	19	~$100m ($50m at H1 18)
A$	77USc	236	
C$	78USc	119	

H1 raw material prices are purchase prices. Due to contractual and inventory time lags, a change in the value of a raw material index will not lead to an EBITDA impact before 3 to 6 months, depending on the raw material and on the specific contractual arrangements.

Note: The sensitivities give the estimated effect on underlying EBITDA assuming that each individual price or exchange rate moved in isolation. The relationship between currencies and commodity prices is a complex one and movements in exchange rates can affect movements in commodity prices and vice versa. The exchange rate sensitivities include the effect on operating costs but exclude the effect of revaluation of foreign currency working capital.

Impact of legacy contracts and tariffs in H1 18 results

	Gross revenue (a) for the 6 months ended		EBITDA (b) for the 6 months ended		Net earnings (c) for the 6 months ended	
	30 June 2018 US$m	30 June 2017 US$m	**30 June 2018 US$m**	30 June 2017 US$m	**30 June 2018 US$m**	30 June 2017 US$m
Aluminium						
Bauxite	**1,207**	957	**452**	377	**246**	215
Alumina	**1,605**[1]	1,303	**435**[3]	253	**222**	111
Intrasegment	**(447)**	(388)	**(3)**	(22)	**(2)**	(15)
Bauxite & Alumina	**2,365**	1,872	**884**	608	**466**	311
Primary Metal	**3,328**[2]	2,833	**917**[4]	803	**437**	322
Pacific Aluminium	**1,265**	1,104	**151**	231	**55**	92
Intersegment & Other	**(1,450)**	(1,166)	**(40)**	1	**(33)**	3
Integrated Operations	**5,508**	4,643	**1,912**	1,643	**925**	728
Other Product Group Items	**589**	667	**(166)**[5]	(61)	**(129)**	(47)
Product group operations	**6,097**	5,310	**1,746**	1,582	**796**	681
Evaluation projects/other	**51**	58	**85**	84	**75**	78
Total Aluminium	**6,148**	5,368	**1,831**	1,666	**871**	759

1. Includes the negative impact of lower realised prices from the legacy alumina contracts.

2. Higher realised price incorporates higher LME, higher mid-west premium and increased VAP premium.

3. Adjusted to remove the EBITDA loss from the legacy alumina contracts.

4. Operating costs include an additional cost from the 10% tariff on sales to the US from 1 June 2018.

5. EBITDA loss from the legacy alumina contracts reallocated to Other Product Group items.

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