

# **Alumina Limited**

## **2016 Full Year Result**

Peter Wasow, Chief Executive Officer  
Chris Thiris, Chief Financial Officer

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# 2016: a transformational year

**Joint venture  
restructured**

JV agreement refreshed providing Alumina greater say, autonomy and flexibility

**A new focussed  
partner**

Alcoa separation delivers a focussed upstream partner

**Portfolio  
restructured**

Restructuring largely complete: Ma'aden ramp up, Point Comfort curtailed, Suriname closed, Portland to restart

**Increased cost  
advantage**

In the lowest quintile of cost, cash costs lowest in at least a decade

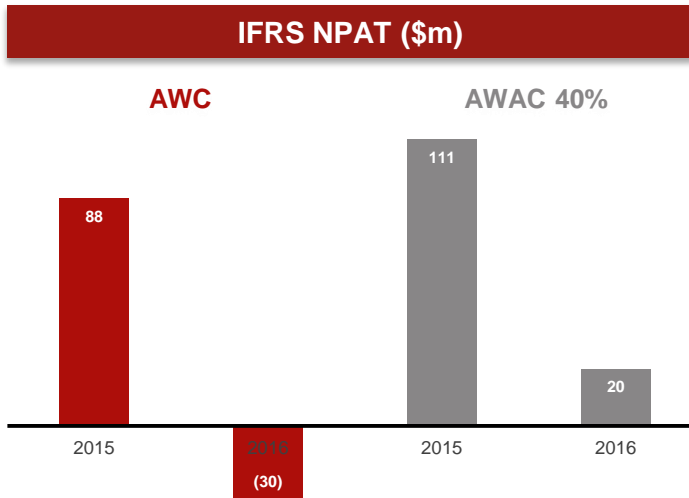
**New bauxite  
business line**

Record production and third party sales



**Alumina Limited and AWAC 2016  
Full-Year Results**

Chris Thiris



## Lower profit but improved cash flows

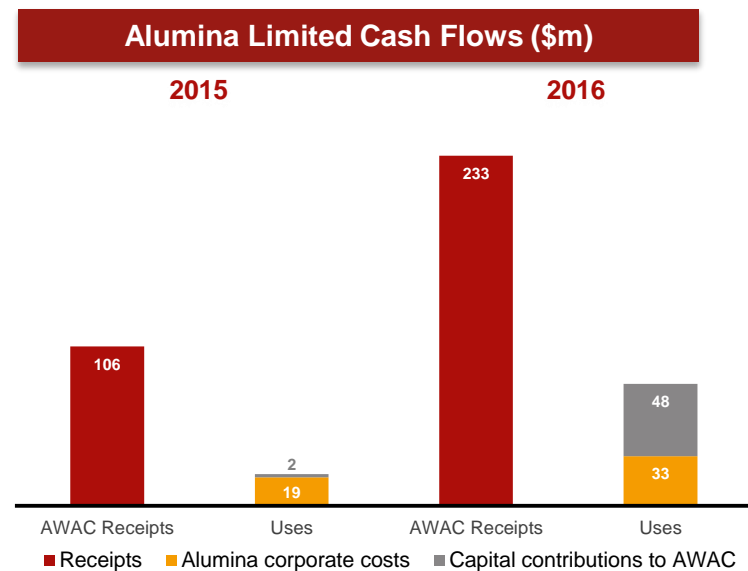
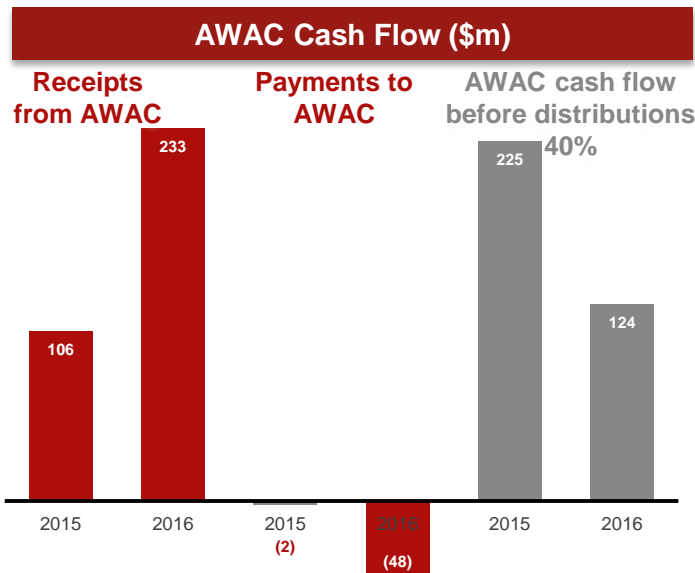
NPAT decreased \$118m  
 Net AWAC receipts increased \$81m

## Final dividend declared: US 3.1 cps

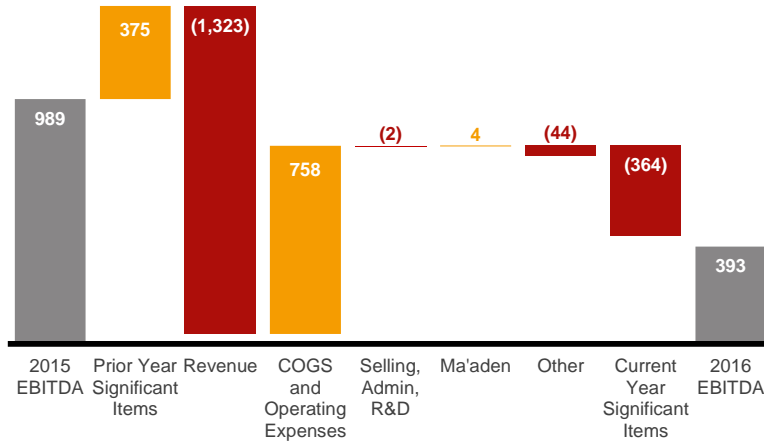
Total dividends: US 6.0 cps (fully franked)

## Balance sheet stability maintained

Gearing at 4.0%



**EBITDA<sup>(1)</sup> (\$m) was largely affected by lower alumina prices**



## Lower prices and volume reflected in EBITDA

Lower alumina margins  
Refinery curtailments reduced volume  
Bauxite sales partially offset curtailed revenue

## Lower production costs

Includes productivity improvements

## Improved performance from Ma'aden

Refinery production approaching capacity

## EBITDA Per Tonne of Alumina<sup>(1)</sup>

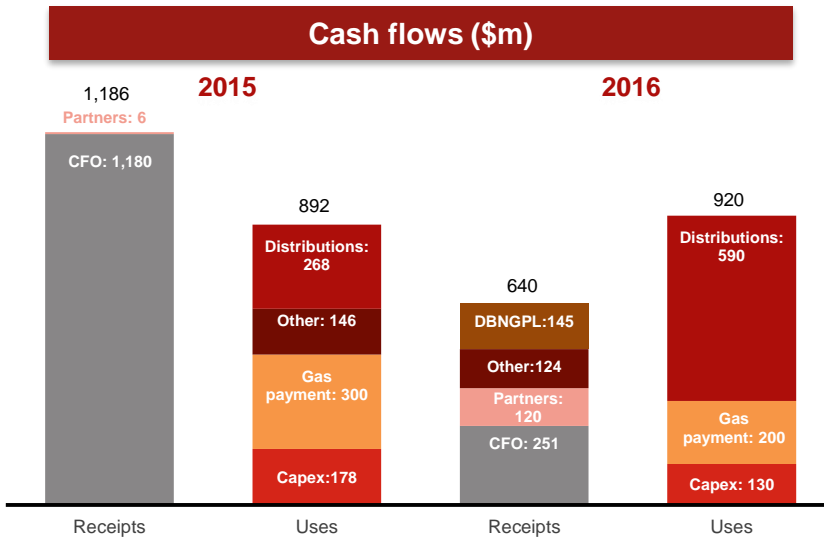
2015	1H16	2H16	2016
\$91	\$46	\$79	\$63

## Margins improved over the year

Rising prices and lower costs

(1) The Earnings before interest, tax, depreciation and amortisation (EBITDA) margin is calculated as AWAC's EBITDA excluding significant items, smelter's EBITDA and equity accounted income/(losses) divided by tonnes of alumina produced

# AWAC cash flows and funding

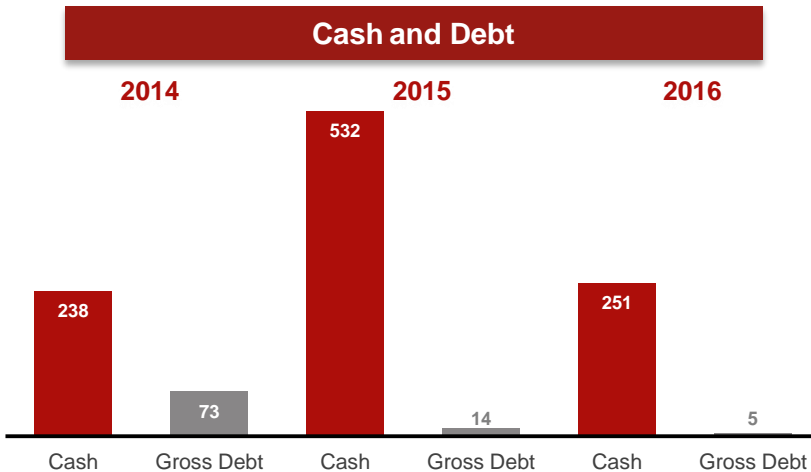


## Positive contribution from operations

Gas prepayment funded by prior year cash

## Significant projects in capital expenditure

Completion of press filtration at Kwinana  
Creep project at Juruti for third party sales



## Strong balance sheet

Supported by tier 1 refining and mining assets

## Combination of low gearing and quality assets

Supports distributions to partners through the cycle

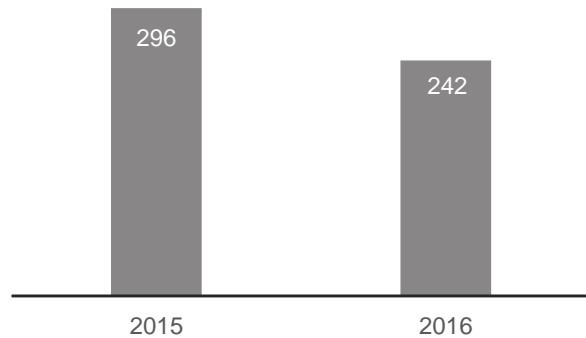
## A\$725m franking account balance in AWAC

Largest and most profitable operations are in Australia

- (1) Partners' contributions exclude Alcoa contribution to fund Alba regulatory payment
- (2) CFO is cash flow from operations, add back Alba regulatory payment and gas prepayment. Includes significant items
- (3) Other is made up of changes to capital lease obligations, related party notes receivable, net movement in borrowings and other
- (4) Cash is cash and cash equivalents, excluding related party notes receivable

# AWAC realised alumina price

**Average price per tonne decreased by \$54/t**



**Average realised price rose over the year**

4Q16 average price was \$263/tonne  
WA spot relevant to 1Q17 is averaging \$344/tonne

**Sales to Alcoa smelters also moving to API**

Negotiated during 2016, effective 1 January 2016

**AWAC recorded higher API/SGA: 84%**

2017: expected to be 85%  
2018: expected to be 92%

**API Sensitivity Guidance<sup>(1)</sup>**

**2017**

API: +\$10/t

EBITDA: +\$100m

Market Prices (US\$ per tonne)	2015	1Q16	2Q16	3Q16	4Q16	2016
Ave spot, one month lag <sup>(2)</sup>	314	207	253	238	271	242
Ave 3-month LME, two month lag <sup>(3)</sup>	1,763	1,489	1,546	1,604	1,632	1,564
Spot/LME	17.8%	13.9%	16.4%	14.8%	16.6%	15.5%

(1) Excludes equity accounted income/loss for the Ma'aden joint venture

(2) Platts FOB Australia alumina price assessment; lagged one month – consistent with average sales contract pricing

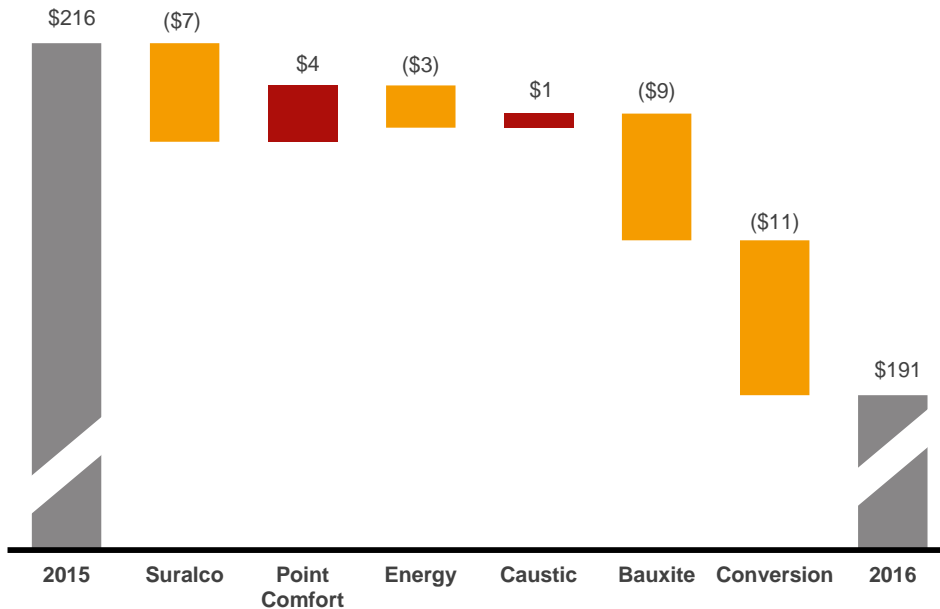
(3) Thomson Reuters; lagged two months – consistent with average sales contract pricing



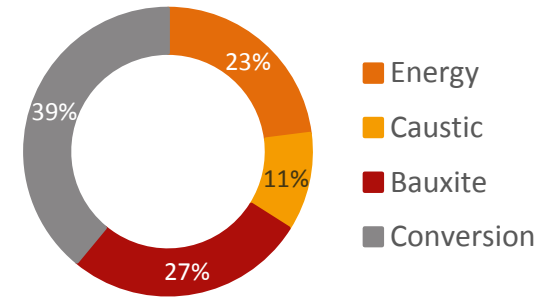
# AWAC cost of alumina production

Cash cost of alumina production per tonne<sup>(1)</sup> reduced by \$25/t

Excluding Point Comfort, cash costs would be \$187/t



Cost structure



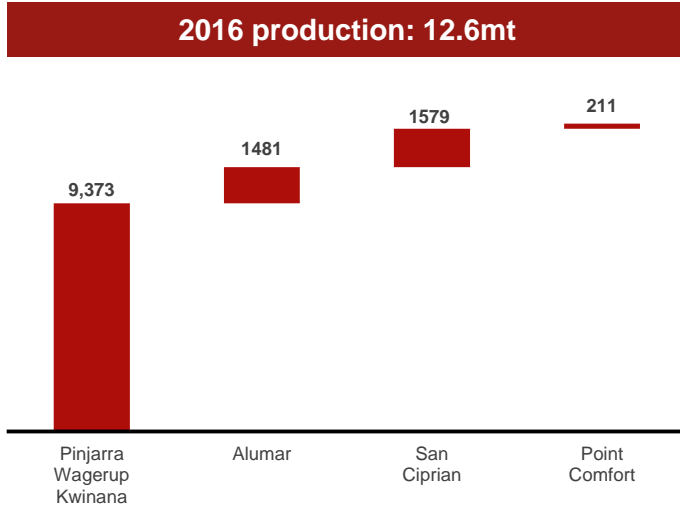
\* Conversion includes: employee costs, indirect costs and other raw materials costs.

Alumina cash cost of production			
2015	1H16	2H16	2016
\$216/t	\$193/t	\$189/t	\$191/t

Caustic Sensitivity Guidance	2017
Caustic: +\$100/dry metric tonne	-\$90m EBITDA

(1) Defined as direct materials and labour, energy, indirect materials, indirect expenses, excluding depreciation. Movements can relate to usage, unit costs or combination of both, timing of maintenance, seasonal factors, levels of production and the number of production days and refinery mix. Includes the mining business unit at cost. The Ma'aden joint venture refinery is not included

# AWAC alumina production



## Production affected by curtailments

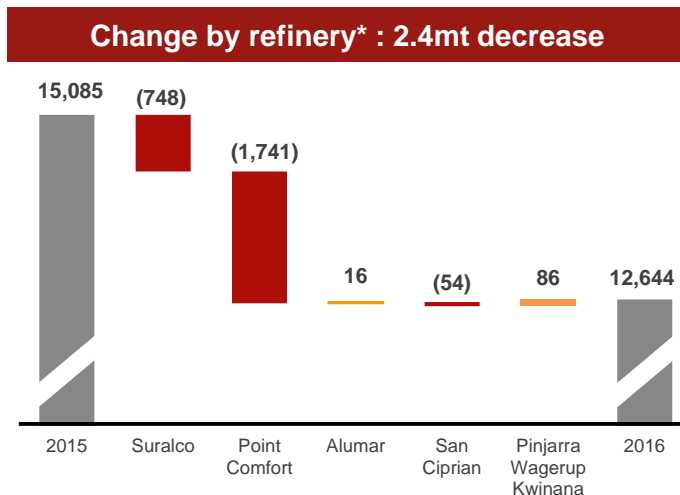
Suralco curtailed November 15  
Point Comfort curtailed June 16

## Record production at three plants

Pinjarra, Wagerup and Alumar

## Production in 2017 to be 12.6mt

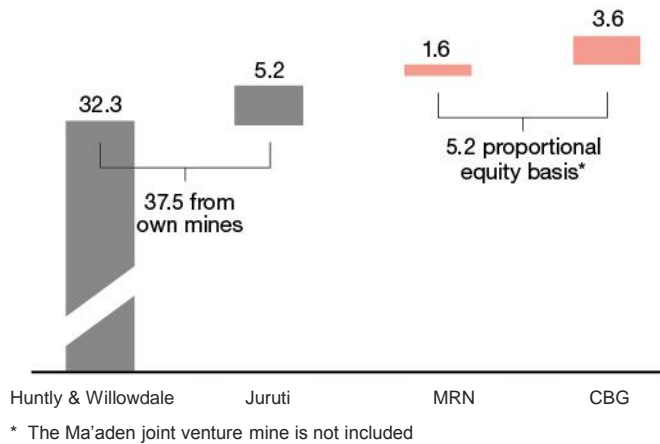
Operating refineries to ramp up



Ma'aden Joint Venture	2015	2016
Refinery production	0.9mt	1.4mt

\* Production of AWAC's operated refineries. Therefore, the Ma'aden joint venture refinery is not included

## 2016 production: 42.7mt



## Decline in production due to curtailment/closure

Suralco mine ceased production in November 2015

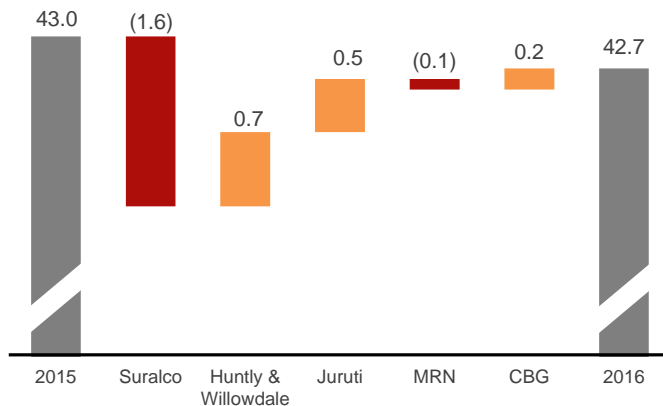
## Third party sales increased to 6.3m tonnes

Refinery curtailment contributed tonnes  
Two shipments from WA

## Third party sales to grow in 2017

Committed sales: 6.8mt  
Includes c.0.4mt from WA  
WA Government approval: 2.3mt pa for five years  
\$70m of capital projects in 2017

## Change by region: 0.3mt decrease



## EBITDA margin<sup>(1)</sup> was 34%

Margin is 38% excluding freight

<sup>(1)</sup> Based on intersegment and third party sales

Note: Tonnes are reported on a zero moisture basis, "bone dry". Mines in which AWAC has an equity interest are included if they supply refineries operated by AWAC

Item	2017 Outlook
<b>Alumina</b>	Production: 12.6mt API sensitivity +\$10/t: approximately +\$100m EBITDA Caustic sensitivity +\$100/dry metric tonne: approximately -\$90m EBITDA
<b>Bauxite (3<sup>rd</sup> Party)</b>	Committed sales: 6.8m BDT, includes 0.4m BDT from WA
<b>Portland</b>	Production: 120kt <sup>(1)</sup>
<b>Australian \$ Sensitivity</b>	+1¢ in USD/AUD: Approximately -\$20m EBITDA
<b>Significant Items (post tax)</b>	Cash: \$120m; Accounting: \$46m
<b>Capex</b>	Approximately \$225m Major projects: WA mining infrastructure, Juruti creep, rolling out of residue press filtration

(1) AWAC's 55% share



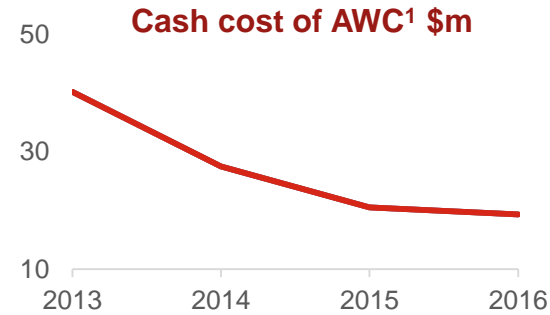
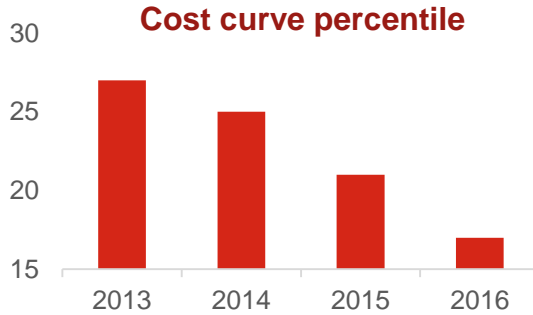
# 2016 in Review and Outlook

Peter Wasow

# Alumina Limited: a new beginning

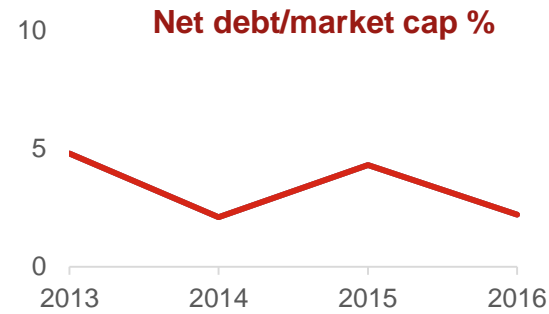
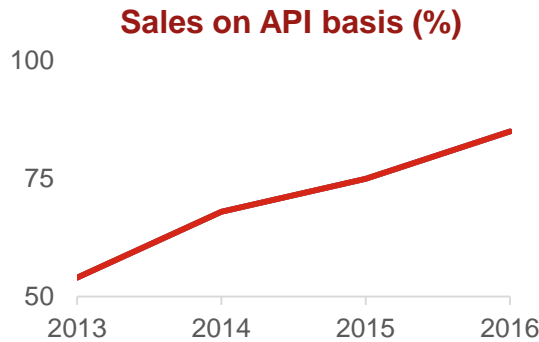
## A new JV agreement and a restructured business over three years

A stronger refinery portfolio



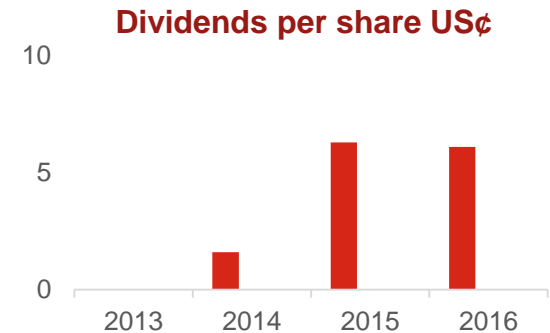
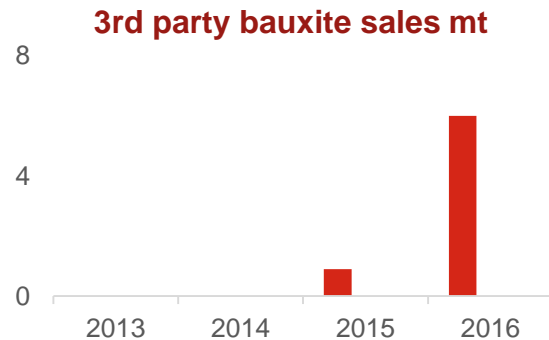
And with less friction costs at AWC¹

Trading on its own & better fundamentals



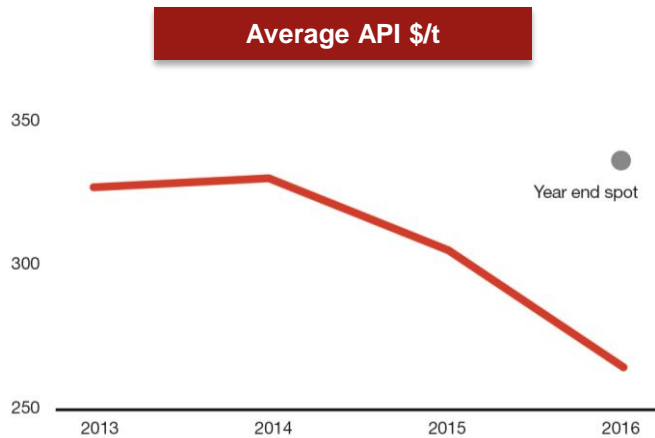
A resilient balance sheet

With new markets to serve and grow



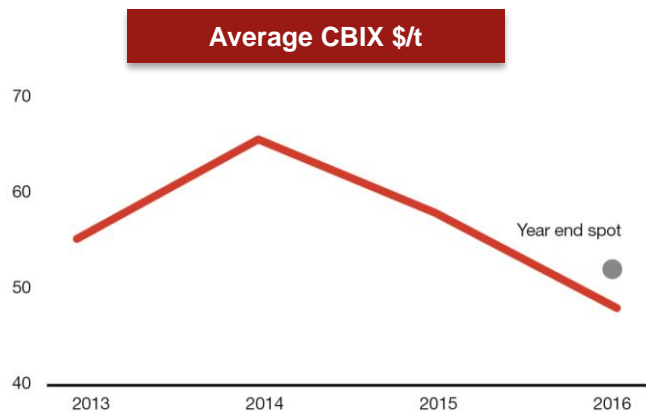
And continued dividends even in tough markets.

## Alumina



- Price increased by 78% over 2016 (High: USD351, low: USD197) as balance tightened (Chinese supply restrictions, smelter demand)
- 1H 2017 expected seasonal fall in demand but supply remains tight
- Limited new capacity in RoW through 2018

## Bauxite



- Prices edging up on continued Malaysian ban
- Guinea mine developments points to higher costs
- Chinese domestic self sufficiency declining
- Unpredictability around Indonesian export restrictions

# Uncertainties in the outlook

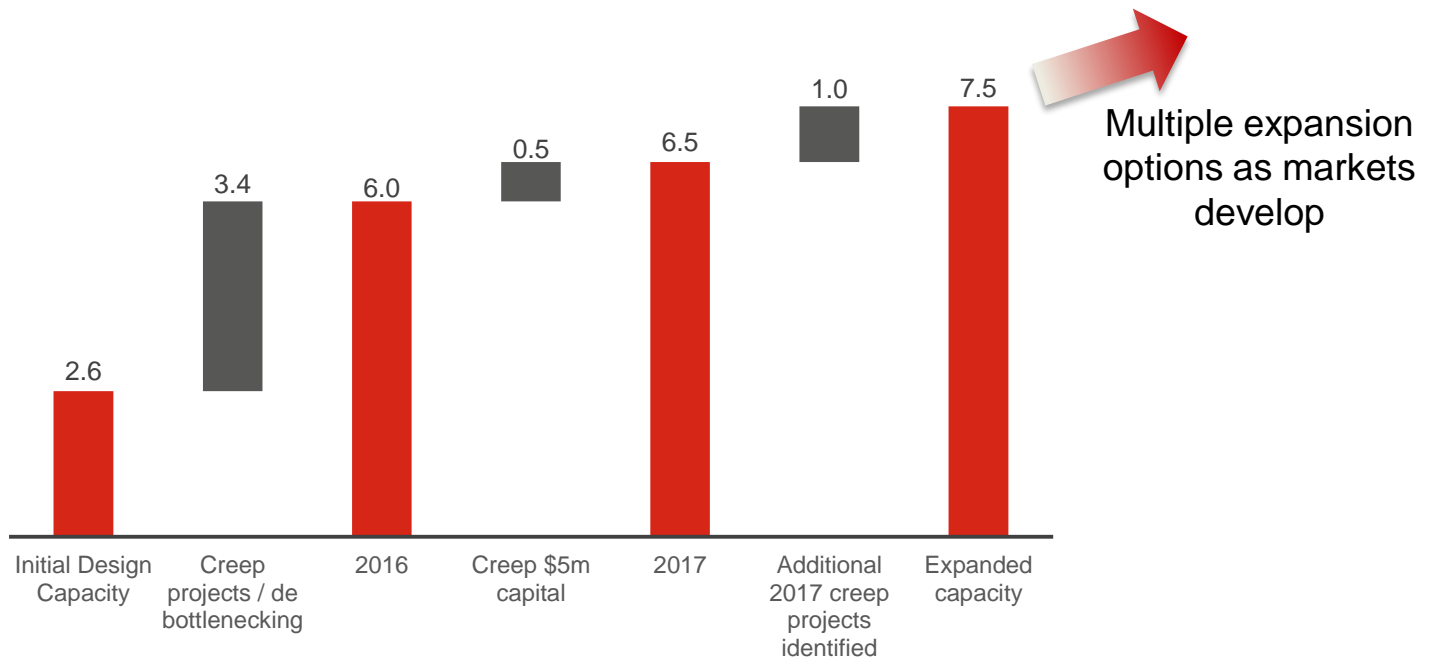
		Short Term	Medium Term	Long Term
<b>Bauxite price</b>	- Low cost supply from Indonesia, Malaysia and/or Vietnam			
	- Increasing supplies from Guinea or Brazil at higher cost			
	- Higher freight rates (due to increased bauxite shipping, availability of ships and fuel increases)			
	- Ongoing difficulties accessing bauxite in India as its smelting expands			
	- Social licence requiring more sustainable practice in developing countries supplying bauxite			
<b>Alumina price</b>	- Chinese environmental policy (in particular coal usage, red mud)			
	- Yuan devaluation			
	- Low cost technology breakthrough on low A:S bauxite or fly ash			
	- Chinese Government curbing uncompetitive industry capacity			
	- Disorderly outflow of high aluminium stocks			



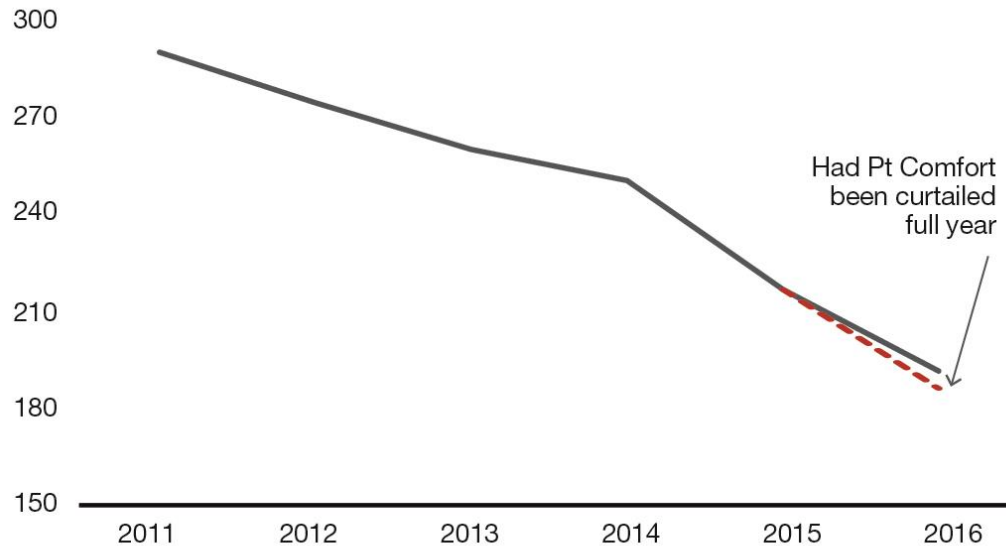
# AWAC's bauxite strategy: Western Australia

Government approval for trial exports	✓
Initial trial volume sold	✓
Successful processing of trial volume	✓
Balance of trial volume sold	✓
Government approval to export 2.5mtpa for 5 years	✓
Higher caustic prices increase value of WA bauxite	✓
Secure long term customers	progressing
Progress infrastructure solutions	

## Juruti bauxite production (wet mtpa)



## Cash cost of alumina produced (\$/t)



### Increase revenue share by:

Delinking alumina pricing from aluminium

### Reduce costs through:

Portfolio restructuring (Closed Point Henry smelter, sold Jamalco, closed Suriname and fully curtailed Point Comfort, low cost Saudi refinery reaching capacity)

Productivity focus and creep projects

### Capitalise on improving relative cost position:

New capacity is more and more reliant on distant bauxite sources

## Industry context

**Strong cash generation at current market settings**

- Primary aluminium demand growth strong: 4% for 2016 and 7% for 2017
- Alumina market in tight balance
- Opportunities for stable long term bauxite suppliers
- Refining issues in medium term
  - China: Cost and availability of bauxite (domestic and imported)
  - RoW: Long lead times and no financial incentive for new capacity

## AWAC has a leading position

- Largest RoW alumina producer and third party supplier and in lowest cost quintile
- Largest and first quartile of cost bauxite miner: record production, abundant resource, optionality of brownfield expansions to match market

## AWAC's strategy is delivering

- De-link alumina pricing: 84% in 2016, 92% from 2018, Alcoa now on API
- Further improving cost position
- Develop a new business line in bauxite

## Alumina Limited provides a unique look-through vehicle

- Unique, largely pure investment in bauxite and alumina
- Positioned for upside: industry context, asset position and strategy
- Very low levels of debt

# **Alumina Limited**

## **2016 Full Year Result**

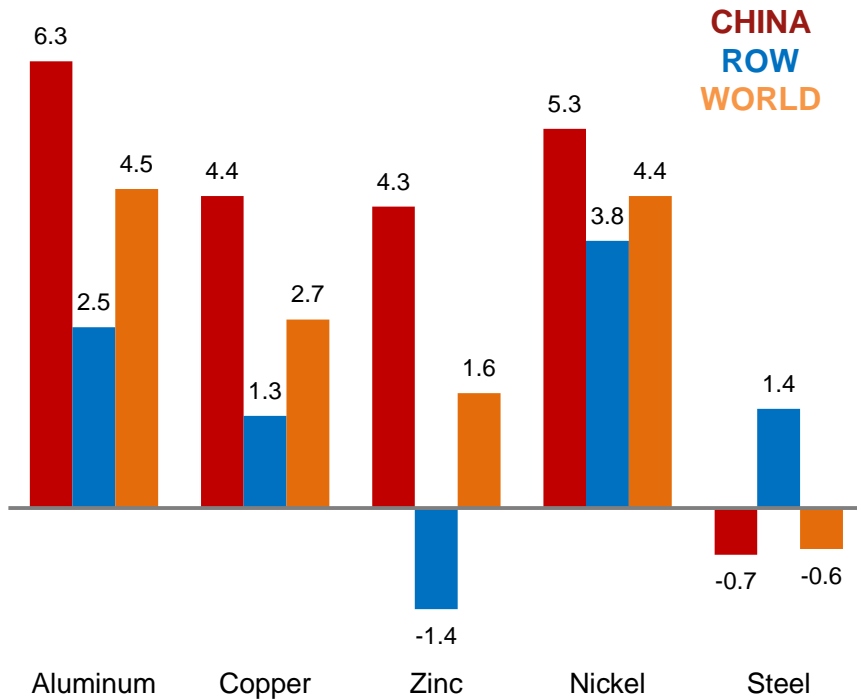
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Chris Thiris, Chief Financial Officer



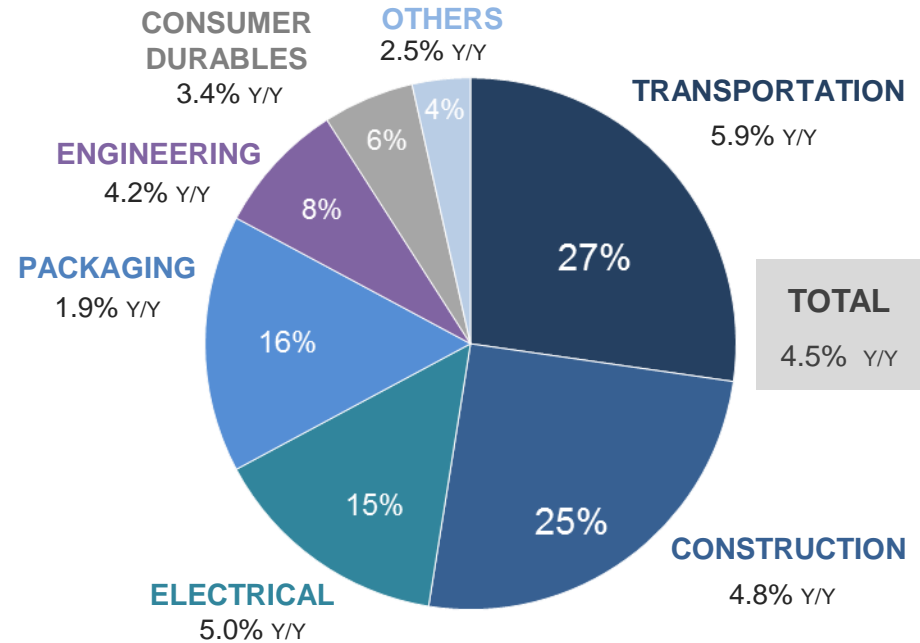
**Appendices**

# Aluminium demand remains strong

**2016 Annual Consumption Growth by Metal %**

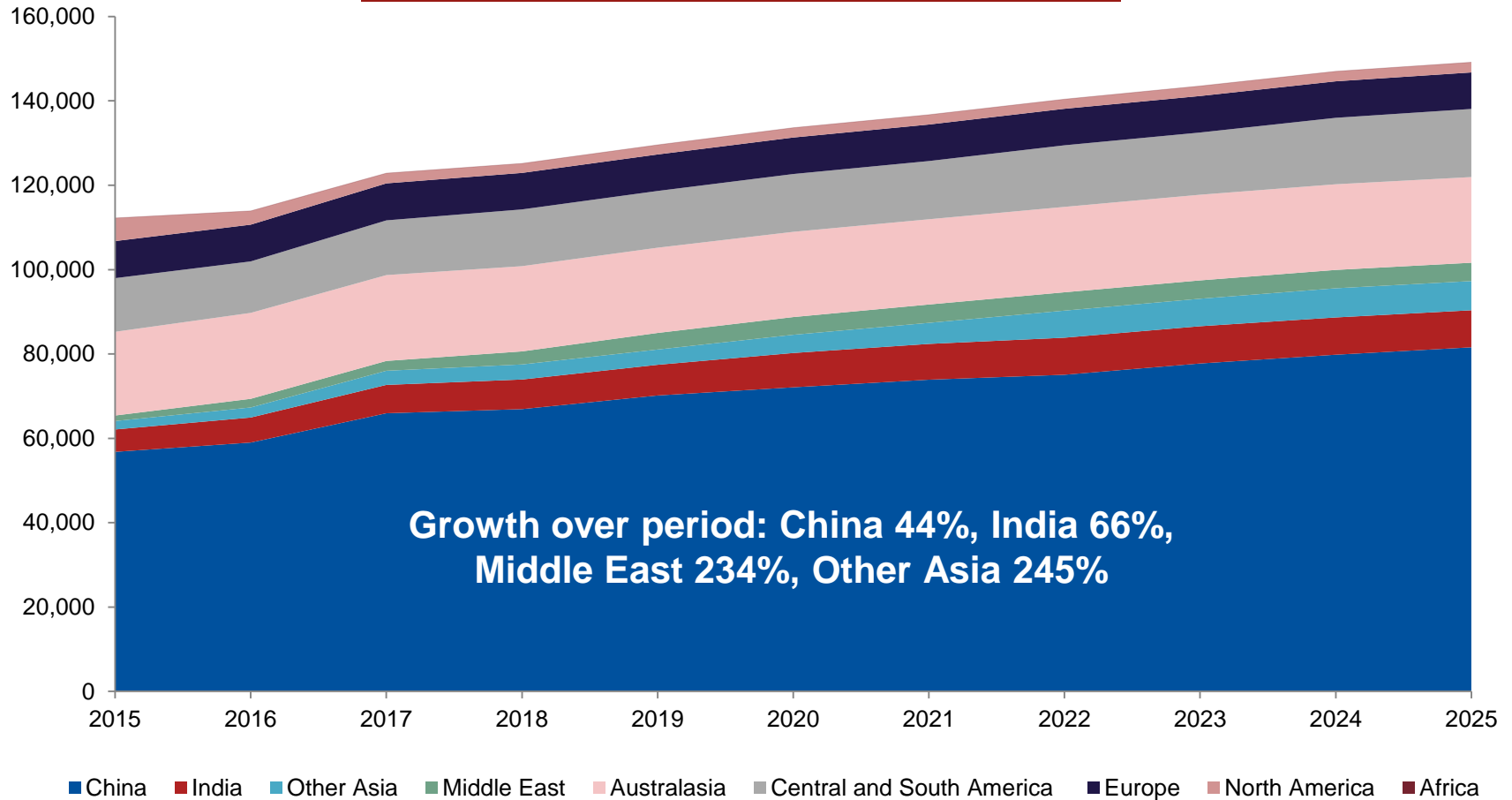


**2016 Global Aluminium Consumption Growth by End Use Sector**



# Alumina centre of gravity moves eastward

**Alumina production, '000 tonnes, MGA**  
(Source: CRU, January 2017)



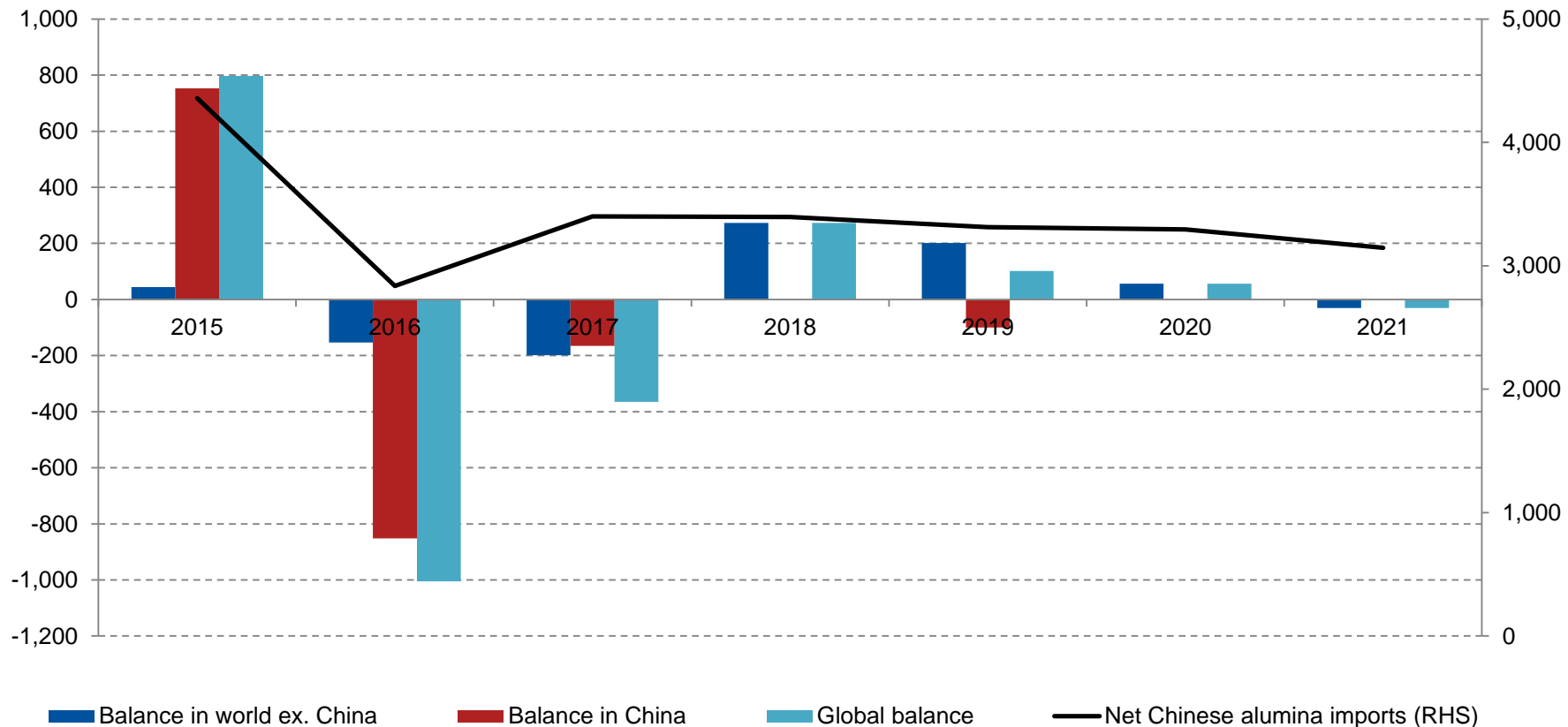


# Medium term bauxite and alumina dynamics

- Costs of bauxite (not integrated with refineries) to increase
  - Chinese bauxite imports forecast to grow sharply from 2020
  - More large-scale greenfields mines with reliable supply needed
  - Base supply from Pacific, likely at higher cost, given social pressures
  - Guinea likely marginal supplier to China, given deposits and grades
  - Atlantic bauxite freight rate exposure; foreign exchange impacts
- Alumina production to shift
  - Main growth forecast to be in Asia and Middle East: closer to smelting growth

# Chinese smelter ramp-ups will keep alumina market tight in 2017

Alumina market balance (LHS), Net Chinese alumina imports (RHS), '000 tonnes  
(Source: CRU, January 2017)

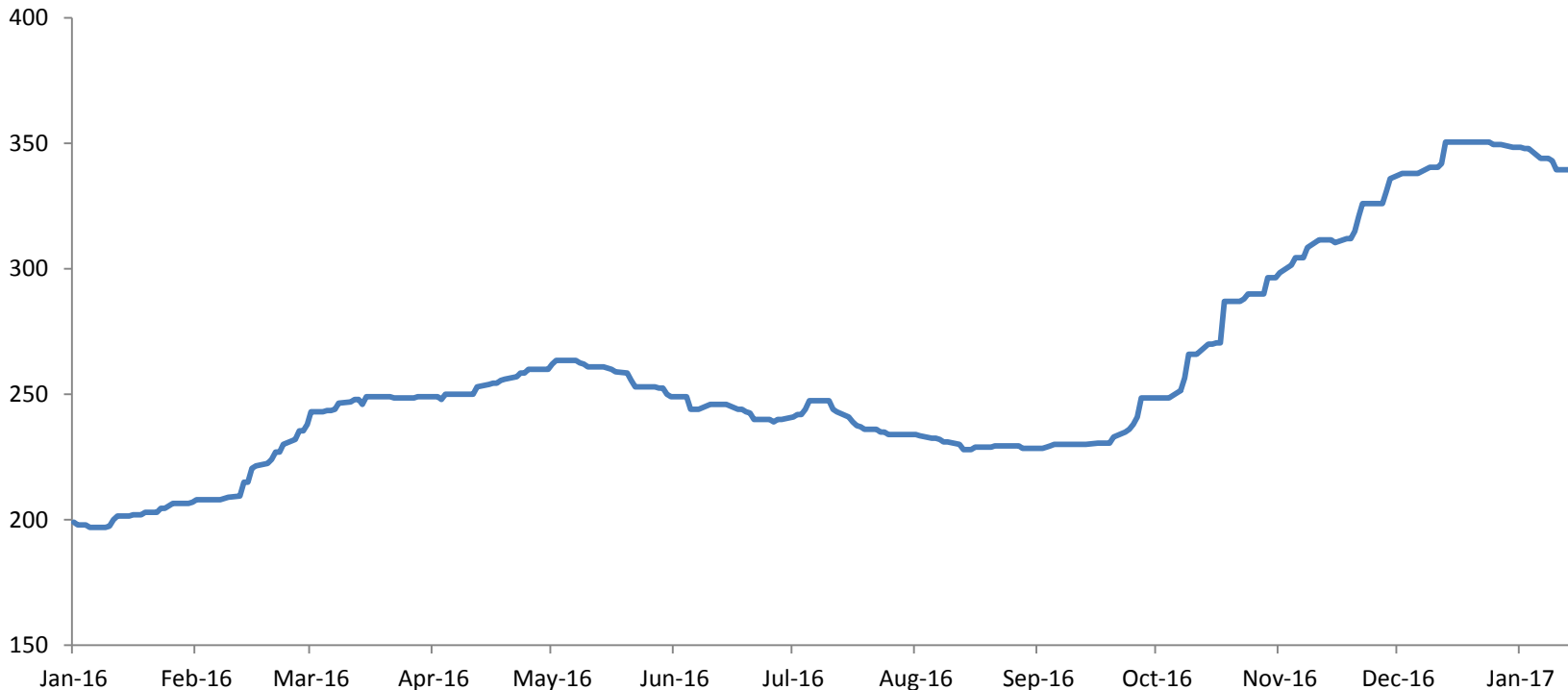


# Modest new alumina supply forecast outside China – only UAE underway

## Upcoming Alumina Projects

REGION	COUNTRY	COMPANY	LOCATION	2017	2018	2019	2020	TYPE	Comments
	UAE	Emirates Global Aluminum	KIZAD, Al Taweelah		2,000			Greenfield	First phase set to be completed in 1Q2018. Phase II could double capacity to 4.0 million tpy.
Asia exc China	Indonesia	Hongqiao Well Harvest Winning Alumina	Ketapang, West Kalimantan	1,000				Greenfield	Phase I started operating late 2015. Ramp up to full capacity in 2016. Second 1mt phase scheduled for 2017 but not yet committed.
		Inalum/Antam/Chalco	West Kalimantan			1,000	1,000	Greenfield	The refinery is planned to hit the market in 2019-2020.
	Laos	Yunnan Aluminum	Paksong		1,000			Greenfield	The company obtained approval from China's NDRC to build the project in Laos. Yunnan is currently waiting for the green-light from the Laotian government.
China	China	China Various Greenfield	Various	0	7,200	800	0	Greenfield	
	China	China Various brownfield	Various	1,100	0	0	0	Brownfield	
<b>TOTAL WORLD</b>				<b>2,100</b>	<b>10,200</b>	<b>1,800</b>	<b>1,000</b>		
<b>TOTAL CHINA</b>				<b>1,100</b>	<b>7,200</b>	<b>800</b>	<b>0</b>		
<b>TOTAL ROW</b>				<b>1,000</b>	<b>3,000</b>	<b>1,000</b>	<b>1,000</b>		

# Australian alumina price – from \$197/t (8 Jan) to \$350.50 December high



## End 2015

- Global alumina oversupply, Chinese liquidate stocks
- Low aluminium prices/margins stall smelting, weaker yuan deters US\$ alumina imports

## Jan-Feb 2016

- Large curtailments begin (8m tpa China, 3m tpa Suriname, Pt Comfort, Lanjigarh)
- Alumina supply becomes short (Atlantic and China)

## Mar-May

- Australian exports to Canada and Iceland
- Malaysian, Indian smelting ramp ups
- 9 month al price high
- Chinese economic stimulus fuels al demand
- Global price rise (to \$263.50)

## June-Aug

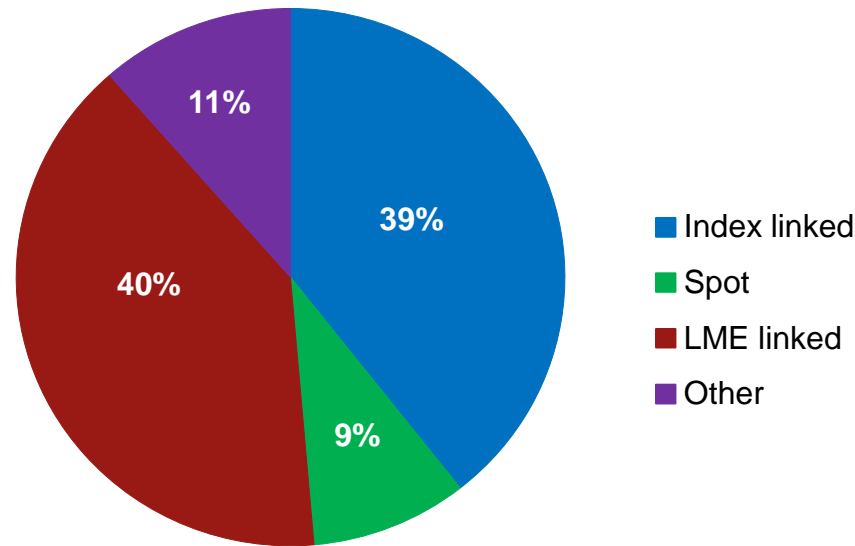
- Low metal prices slow smelting ramps and restarts
- 4m tpa of curtailed alumina capacity restarted, overshot demand
- Aluminium price slide, cheap bauxite, lower Chinese alumina cost

## Sept-Dec

- Chinese smelter ramps catch up, alumina balance tightens, China's alumina prices soar
- Sherwin refinery shuts, Atlantic tight supply
- Coal and caustic costs up
- Coal use, red mud, transport regulatory issues in China restrict supply
- Chinese seasonal stocking

## Index Pricing – Gaining Momentum

Alumina pricing arrangements in 2016 outside China, %

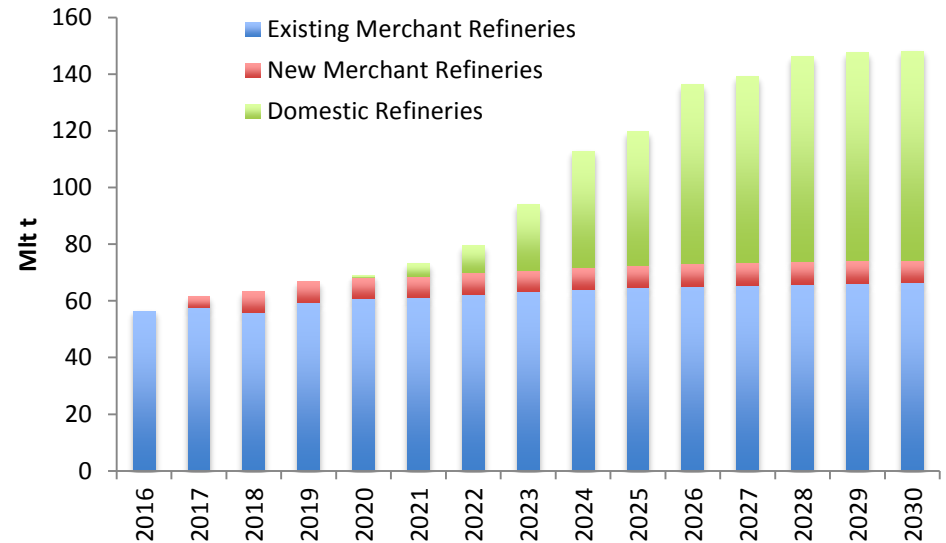
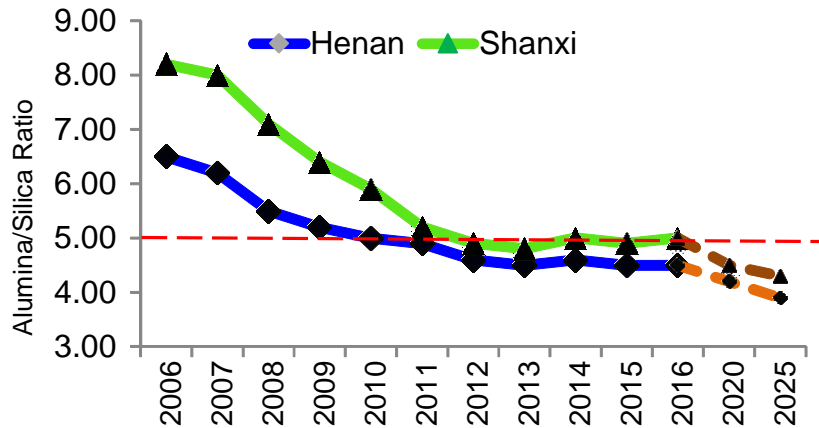


Source: CRU, September 2016

- In 2016, 48% of third party sales on spot or alumina index (up from 34% in 2013)
- 2018 forecast 47% index, 11% spot, 30% LME-linked, 12% other

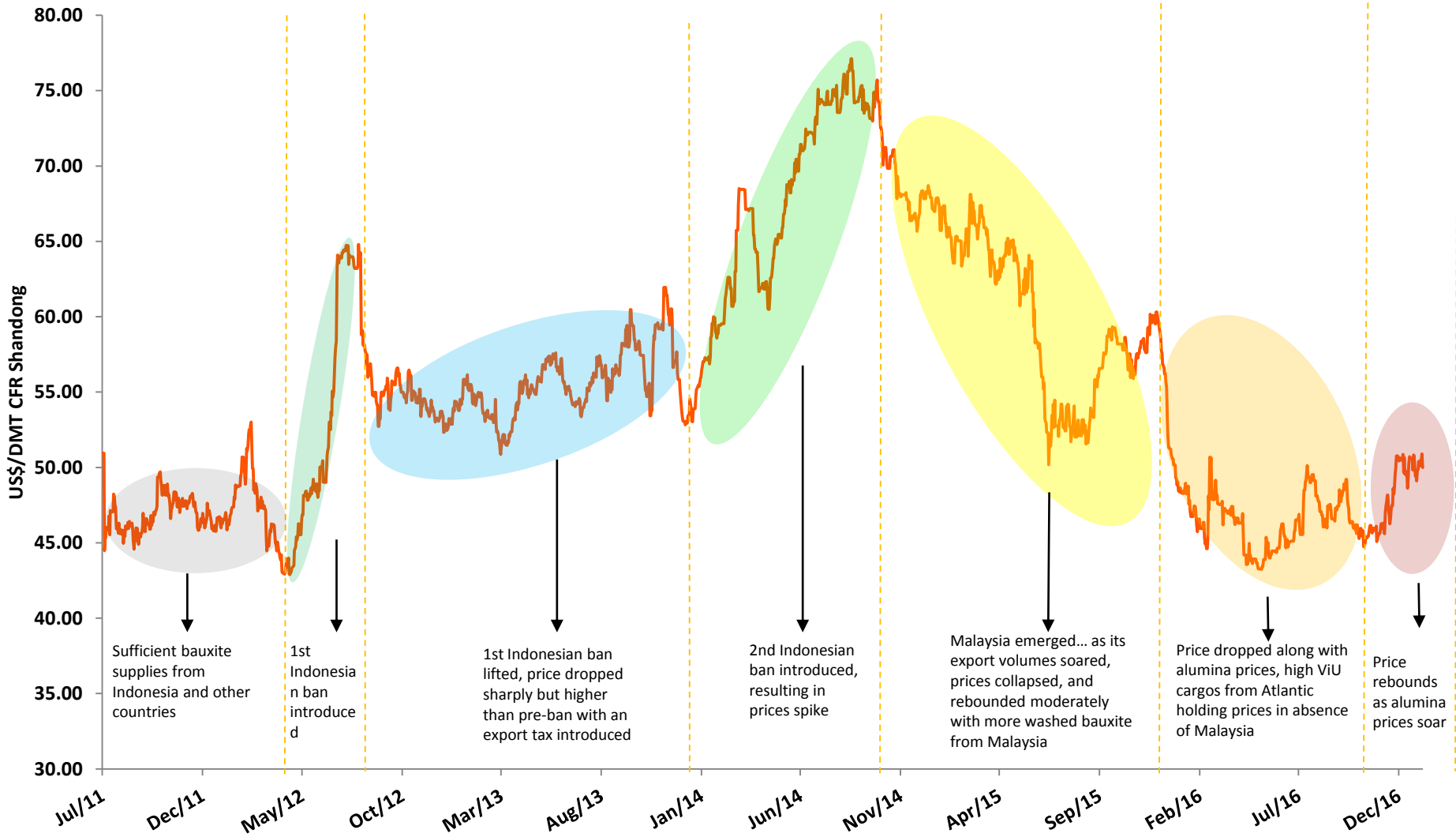
# Chinese bauxite imports forecast to rise

## Declining domestic bauxite quality in key alumina producing provinces



- Historical pure Bayer process economic limit is above 5
- Feed grade marginal increase in 2014 as refiners used allocated (not domestic traded) bauxite
- Mining costs are increasing as deposits go deeper
- Limited access to high quality bauxite deposits (allocations)
- Lower alumina prices over the past year have led to “high grading” of some deposit
- Likely inland refiners importing bauxite would relocate/build coastal capacity to reduce freight

# The Bauxite Price Journey – July 2011 to December 2016 (CBIX)\*

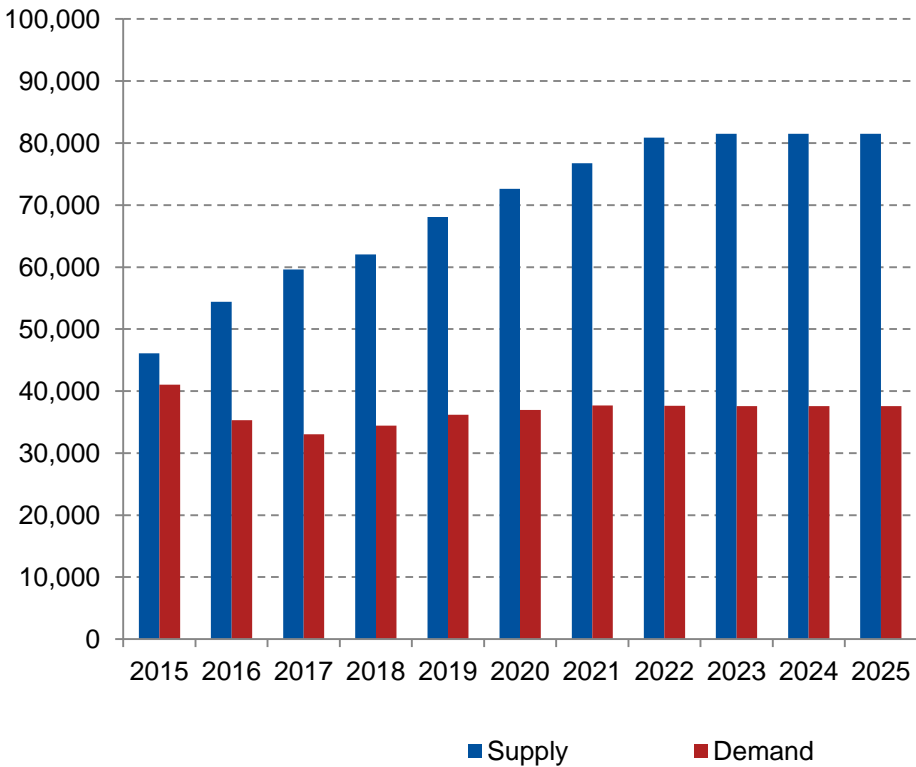


\* CBIX is a Value in Use-adjusted reference price for bauxite of a standard grade CFR China

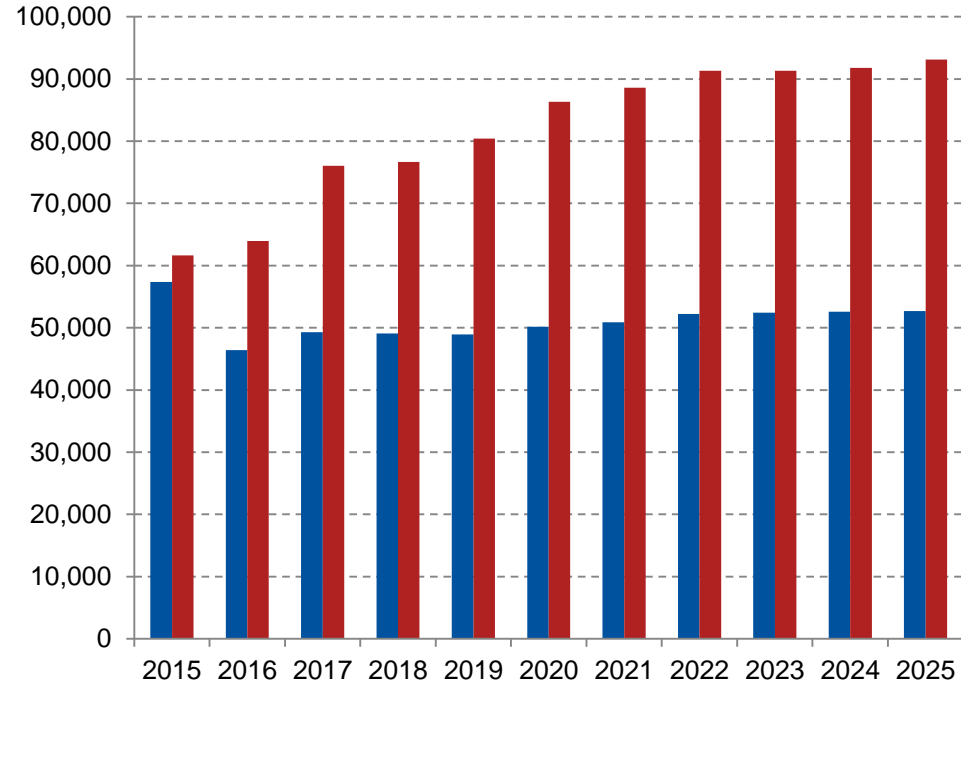
# Atlantic bauxite meeting shortfall in the Pacific

Third party bauxite supply and demand, '000 tonnes  
(Source: CRU, January 2017)

## Atlantic



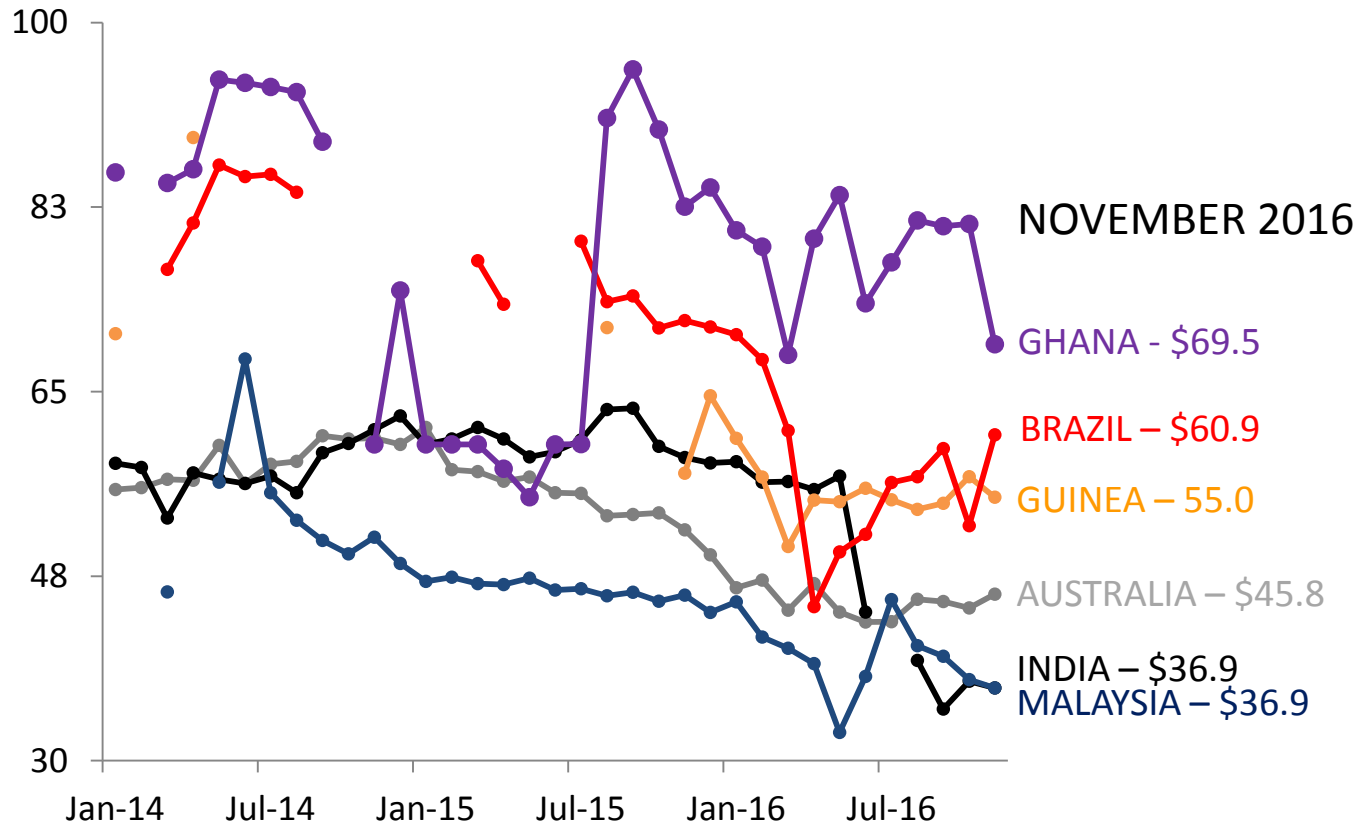
## Pacific



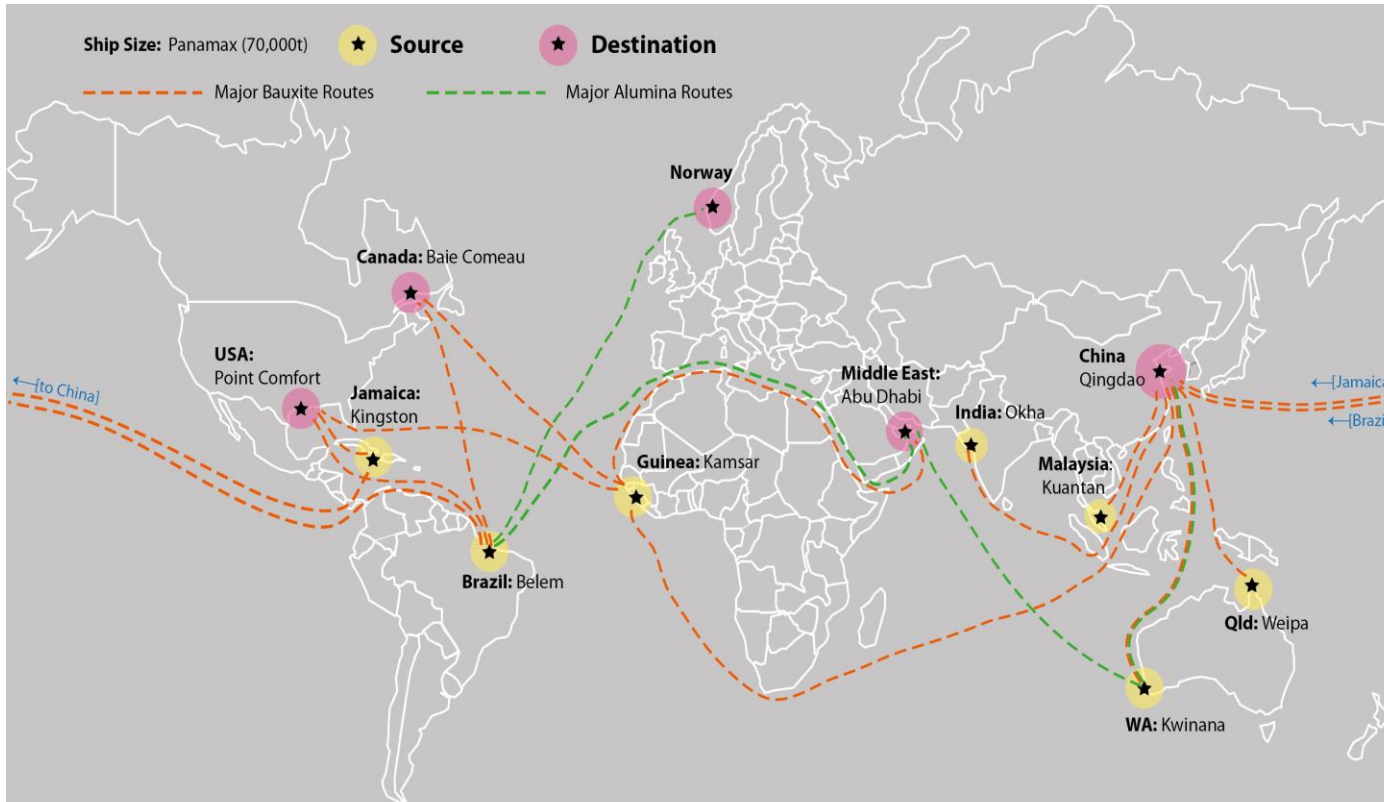


# China imported bauxite – Atlantic sources at much higher landed prices

Landed Prices of Imported Bauxite



# Key Bauxite/Alumina Freight Routes



- The freight market in 2H 2016 rebounded from a nearly 30-year low in 1H. Freight rates peaked in end 3Q and eased in 4Q.
- Recovery of both Intermediate Fuel Oil (IFO) ship fuel prices and vessel daily charter rates have driven freight rates to surge in 2H 2016
- Increases in both oil prices and vessel charter rates are forecast to continue gradually, leading to an increase in overall freight rates 2017

Source	Destination	Distance	Avg. Q4 2016 Freight (US\$/wmt)	Source	Destination	Distance	Avg. Q4 2016 Freight (US\$/wmt)
WA	Middle East	5,056	9.85	WA	- China	4,216	8.47
Guinea	Middle East	6,612	13.70	Qld	- China	3,280	6.82
Brazil	Middle East	8,116	15.84	Guinea	- China	11,128	20.11
Jamaica	USA	1,283	3.85	Brazil	- China	11,184	24.24
Brazil	USA	3,368	7.04	Jamaica	- China	9,156	21.14
Guinea	USA	4,773	9.68	Malaysia	- China	2,604	6.82
Guinea	Canada	3,542	7.66	India	- China	5,118	10.44
Brazil	Canada	3,318	6.96	Brazil	- Europe (Norway)	5,745	10.95