

## Presentation at Bank of America Merrill Lynch Global Metals, Mining & Steel Conference

Attached is a copy of a presentation prepared by Mr Peter Wasow, Chief Executive Officer and Mr Chris Thiris, Chief Financial Officer, for the Bank of America Merrill Lynch Global Metals, Mining & Steel Conference held in Barcelona, Spain.

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17 May 2017

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**Alumina Limited**  
**Bank of America Merrill Lynch**  
**Global Metals, Mining & Steel Conference**  
**Barcelona, May 2017**

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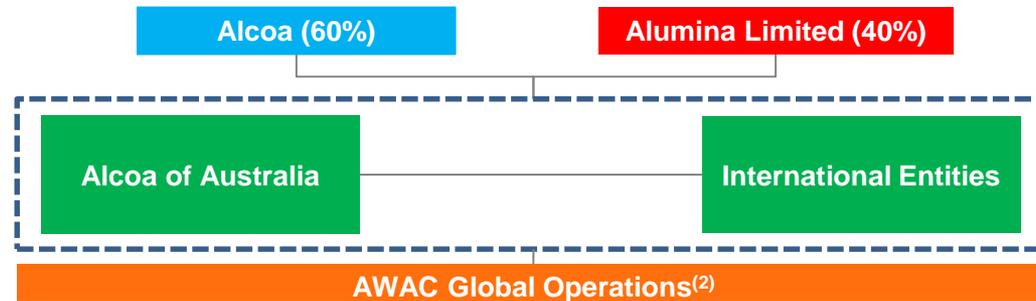
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# Alumina Limited

## An investment in the AWAC joint venture

### AWAC's<sup>(1)</sup> Underlying Businesses

AWAC is the world's largest producer of alumina and miner of bauxite



Location <sup>(4)</sup>	Bauxite Mines <sup>(3)</sup>	Alumina Refineries	Aluminium Smelters <sup>(5)</sup>
<b>Australia</b>	Huntly & Willowdale	Kwinana, Pinjarra & Wagerup	Portland (55%)
<b>Brazil</b>	Trombetas (9.6%) & Juruti	Sao Luis (Alumar) (39%)	-
<b>Guinea</b>	Sangaredi (23%)	-	-
<b>USA</b>	-	Point Comfort <sup>(6)</sup>	-
<b>Spain</b>	-	San Ciprian	-
<b>Saudi Arabia</b>	Al Ba'itha (Ma'aden), 25.1%	Ras al Khair (Ma'aden), 25.1%	-

<sup>(1)</sup> AWAC is a JV comprised of a number of companies, of which Alcoa of Australia owns and operates the Australian assets.

<sup>(2)</sup> AWAC also owns and operates a shipping business which provides transport for AWAC's alumina business and 3<sup>rd</sup> parties.

<sup>(3)</sup> AWAC has other bauxite exploration interests.

<sup>(4)</sup> The mining and refining operations in Suriname were fully curtailed by 30 November 2015 and in January 2017 AWAC announced they would be permanently closed.

<sup>(5)</sup> Point Henry smelter permanently closed on 1 August 2014.

<sup>(6)</sup> The refining capacity at Pt Comfort was fully curtailed by 30 June 2016.



*Ma'aden Refinery (AWAC has a 25.1% interest in the refinery and associated mine)*



*Ship loading in Brazil*

### **Alumina Limited is a pure investment in the upstream segment of the aluminium value chain**

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Only business activity is 40% investment in AWAC

### **Alumina Limited provides the cleanest look through to AWAC's underlying performance**

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Each AWAC entity is required to pay distributions to JV partners in accordance with JV agreements

Financial policies ensure minimal leverage maintained in Alumina Limited

Alumina Limited's holding costs are also minimal

Alumina Limited's dividend policy is to distribute free cash flow

### **Alumina Limited has rights and powers not normally attributable to a minority shareholder**

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JV agreements protect Alumina Limited's shareholder interests

A super-majority vote is required to enact certain material changes to the operations of the Enterprise

### Industry context

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Primary aluminium demand growth strong: 4% for 2016 and 5% for 2017

Alumina market is broadly balanced and expected to be tighter by year end, potential winter curtailments in China

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

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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

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De-link alumina pricing: 84% in 2016, 92% from 2018

Further improving alumina refining cost position

Developing a new business line in bauxite

### Alumina Limited provides a unique look-through vehicle

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Unique, largely pure investment in bauxite and alumina

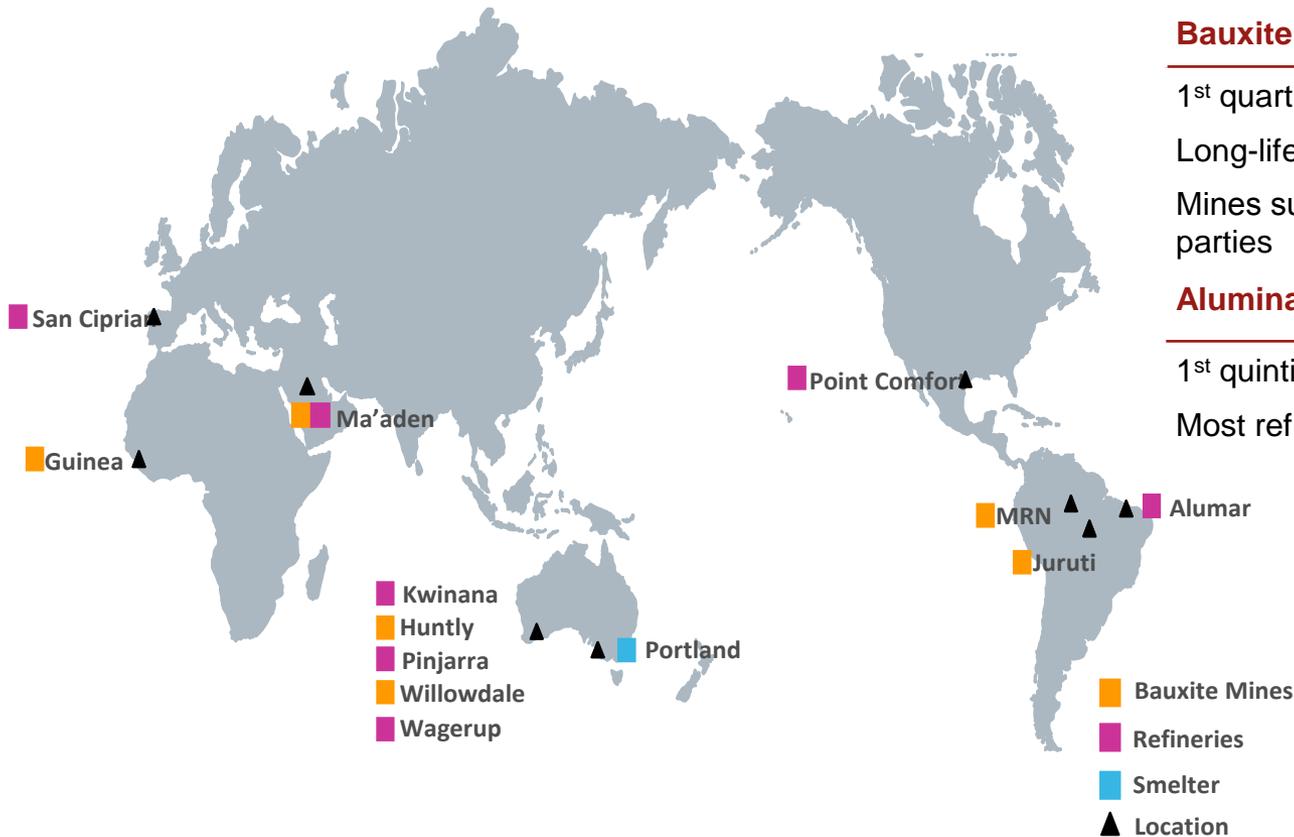
Positioned for upside: industry context, asset position and strategy

Very low levels of debt

An aerial photograph of an industrial facility, likely an alumina refinery. A long train of dark-colored railcars is positioned on tracks on the left side of the image. To the right, a long conveyor belt system is visible, transporting a reddish-brown material. The ground is dry and dusty, with some industrial structures and equipment scattered throughout the site.

# **Alcoa World Alumina & Chemicals ("AWAC")**

**AWAC is premier owner and operator of tier 1 bauxite mines and alumina refineries**



### Bauxite mining

1<sup>st</sup> quartile 2016 cash cost of production

Long-life mines

Mines supply AWAC's refineries and third parties

### Alumina refining

1<sup>st</sup> quintile 2016 cash cost of production

Most refineries are integrated with mines

### Operational Excellence

Maintain strong integrated bauxite and refining system with low cost position

Reduce capital intensity of mining and refining operations

Optimize the portfolio

Expand Alumina Price Index sales

Disciplined management of costs and capex

### Focused Growth

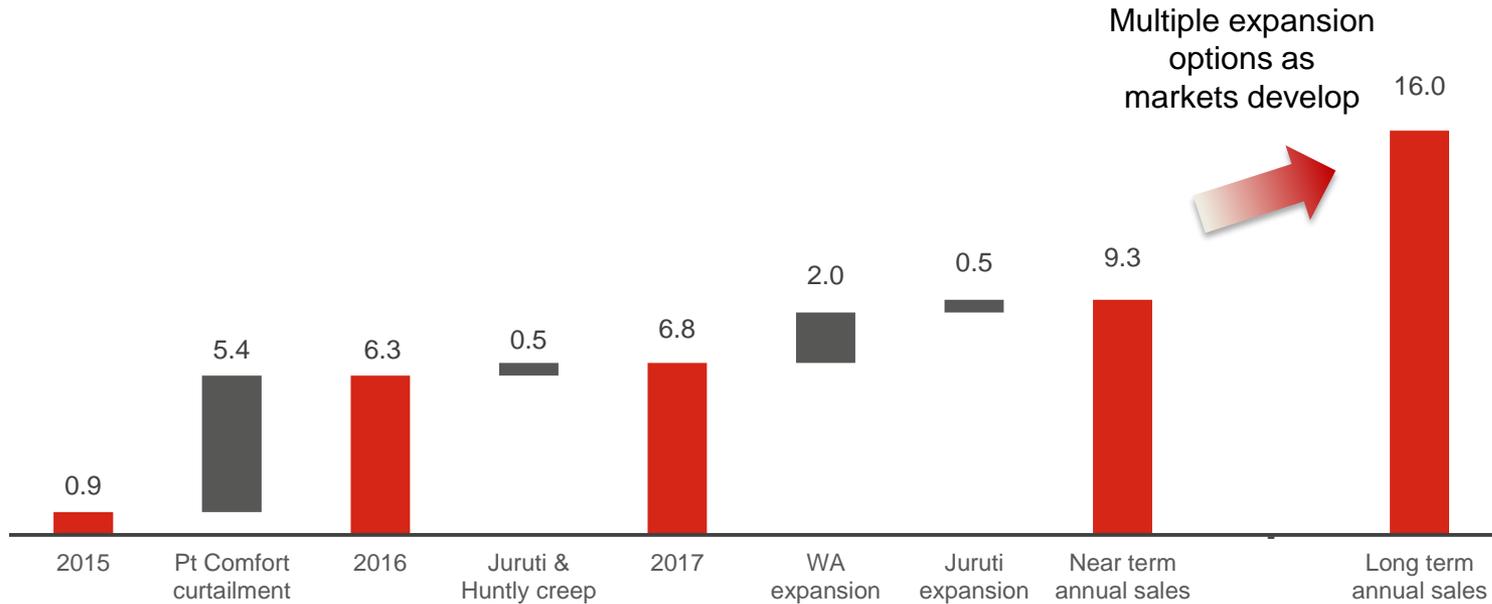
Target brownfield expansions  
Creep mine and refinery production

Strategic alignment with customers

Continue technology innovations

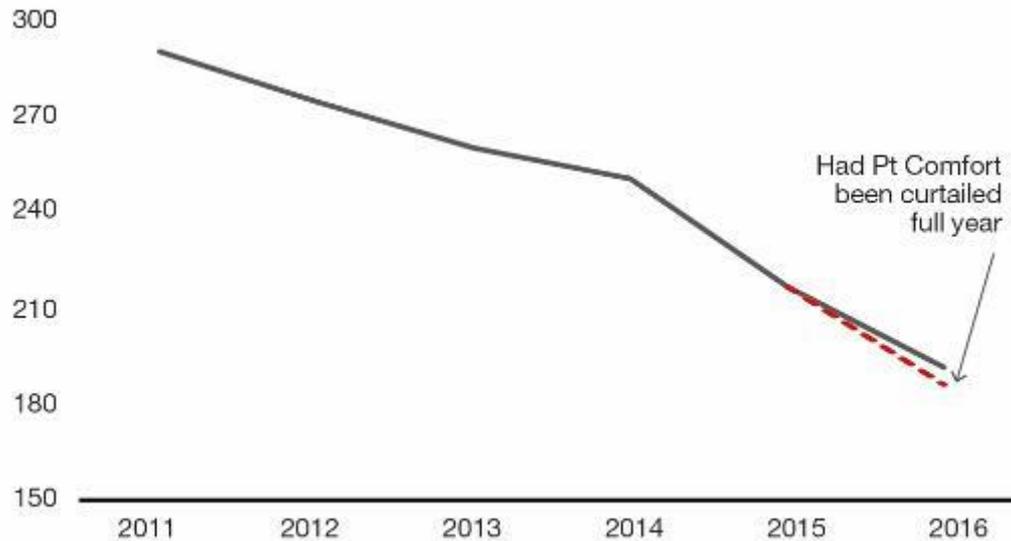
... while maintaining a conservative capital structure

### Potential third party bauxite sales (million bdm<sup>(1)</sup> pa) Near term increase requires minimal capital



<sup>(1)</sup> Bone dry metric tonnes

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



### Reduce costs through:

- Portfolio restructuring <sup>(1)</sup>
- Productivity focus and creep projects
- Reduce capital intensity

### Capitalise on improving relative cost position:

- New capacity is more and more reliant on distant bauxite sources

<sup>(1)</sup> Sold Jamalco, closed Suriname and fully curtailed Point Comfort



*Residue presses*



*Mobile spreader*

### **Traditional method requires solar drying of residue**

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Large storage areas needed

Water applied to prevent dusting

### **Press filtration creates high density cake**

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Reduces storage area needed

Limits dusting

### **Kwinana is the first refinery to implement (2016)**

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Capex was \$115m

Avoids additional c.\$100m capex over next 10 years

Refining life extended by c.15 years



*Press filtration building*

### **Press filtration has many benefits**

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- Safer method of residue storage
- Reduces future capex and frequency
- Uses less land, extending life of assets, reducing future remediation costs
- Improves water management
- Faster recovery of caustic soda
- Reduces dusting
- Potential secondary product of sand

### **Evaluation underway for other refineries**

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- Initial focus is on WA operations

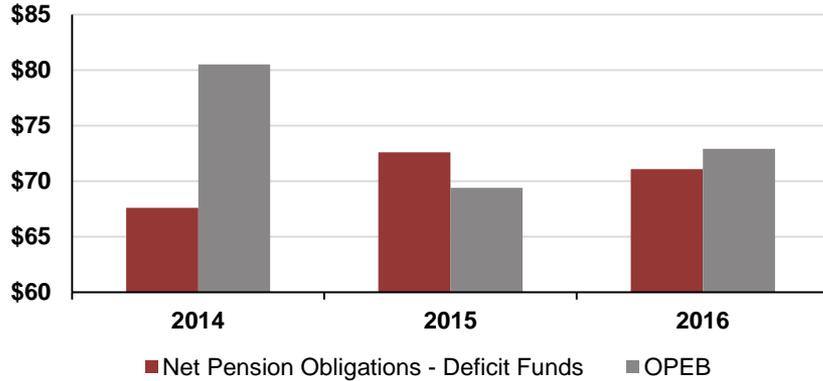


*Radial stacker*

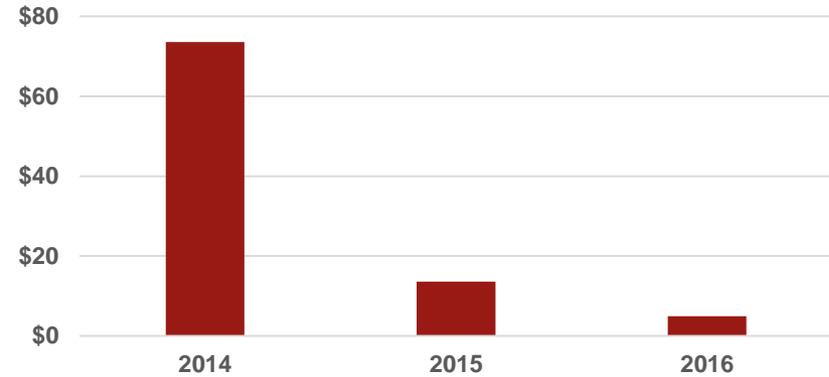
# AWAC

## Conservative capital structure

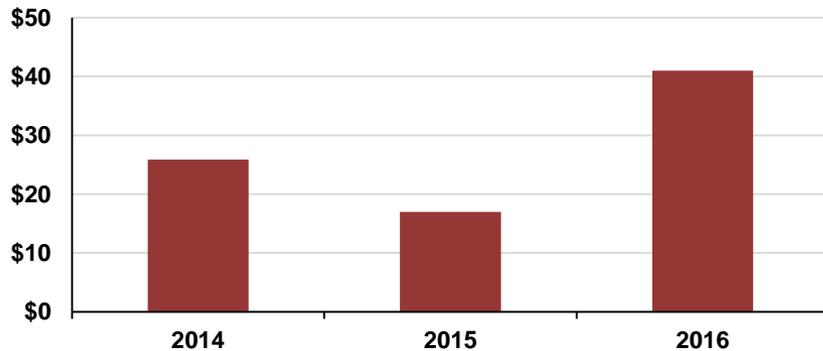
**Net Pension Obligation & Other Post Retirement Obligation<sup>(1)</sup> (\$m)**



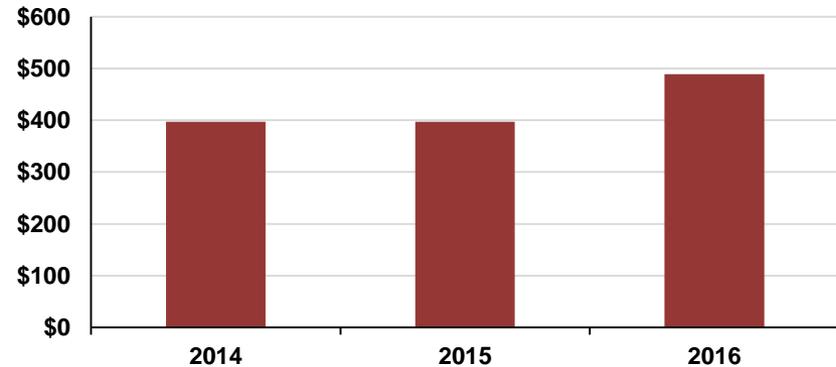
**Gross Debt (\$m)**



**Environmental Remediation Reserve<sup>(2)</sup> (\$m)**



**Asset Retirement Obligation<sup>(3)</sup> (\$m)**



<sup>(1)</sup> Suriname pension plans and other post retirement obligations have not been adjusted for the impact of closure.

<sup>(2)</sup> A liability is recorded for environmental remediation when a cleanup program becomes probable and the costs can be reasonably estimated.

<sup>(3)</sup> Recorded AROs related to legal obligations associated with the normal operations of bauxite mining, alumina refining, and aluminium smelting facilities. These AROs consist primarily of costs associated with spent pot lining disposal, closure of bauxite residue areas, mine reclamation, and landfill closure.

An aerial photograph of an industrial facility, likely an alumina refinery. A long train of covered hopper cars is positioned on tracks on the left. To the right, a long conveyor belt system extends into the distance, carrying a large volume of reddish-brown material. The ground is dry and dusty, with some industrial structures and equipment visible in the background.

# **AWAC JV Agreements**

1

Improves Alumina's influence over its investment in AWAC

## Timing

From  
1 November 2016



- a) Enhanced governance rights
- b) Improved capital efficiency

2

Increases Alumina's strategic flexibility and autonomy as a corporate entity

Upon change of control



- a) Removal of exclusivity and the addition of sole risk rights (change of control of Alumina **or** Alcoa)
- b) Offtake rights for bauxite and alumina (change of control of Alumina)

## Enhanced governance rights

- Super majority voting requirement (80%) for
  - Acquisitions or divestitures, expansions and curtailments exceeding certain value (\$50 million) or volume limits (0.5mt alumina, 2mt bauxite); other matters
- Improved information sharing
- More streamlined process for resolving disputes

## Improved capital efficiency

- Greater certainty of cash flow from AWAC
  - Each AWAC JV entity will pay a minimum of 50% of the prior quarter's profit **and** surplus cash above \$140 million (total group) will also be distributed on a quarterly basis
- Ability to debt fund AWAC
  - Debt will be raised to fund growth projects with certain limits

## Removal of exclusivity

- Immediately on and from a change of control of Alumina Limited or Alcoa Corp the exclusivity and non-compete provisions will terminate:
  - removes takeover impediment for industry acquirers
  - either partner may also, on a sole risk basis:
    - expand an existing AWAC operation;
    - develop a new project on AWAC tenements; or
    - pursue a project outside of AWAC

## Offtake rights

- Upon a change of control of Alumina Limited, the acquirer (or consortium member) is entitled to offtake as follows:

### *Alumina:*

- its net short position; plus
- up to 1Mtpa of alumina, which it may sell as it sees fit;

### *Bauxite:*

- its net short position of bauxite for internal consumption;

Both subject to a cap of Alumina Limited's equity share of AWAC's production and net of AWAC's own consumption and existing third party agreements

An aerial photograph of an alumina processing facility. A long train of covered hopper cars is on the left, and a long conveyor belt system is on the right, both extending into the distance. The ground is reddish-brown, and there are some industrial structures and piles of material in the background.

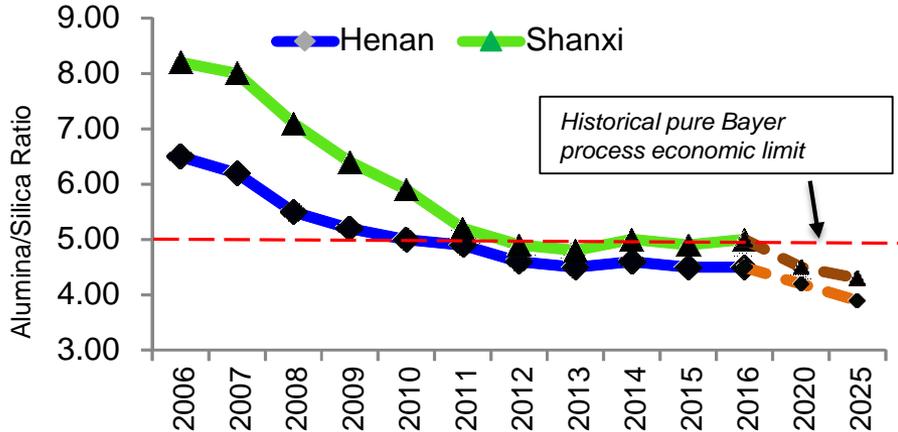
# Market Outlook

# 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			

# Chinese bauxite imports

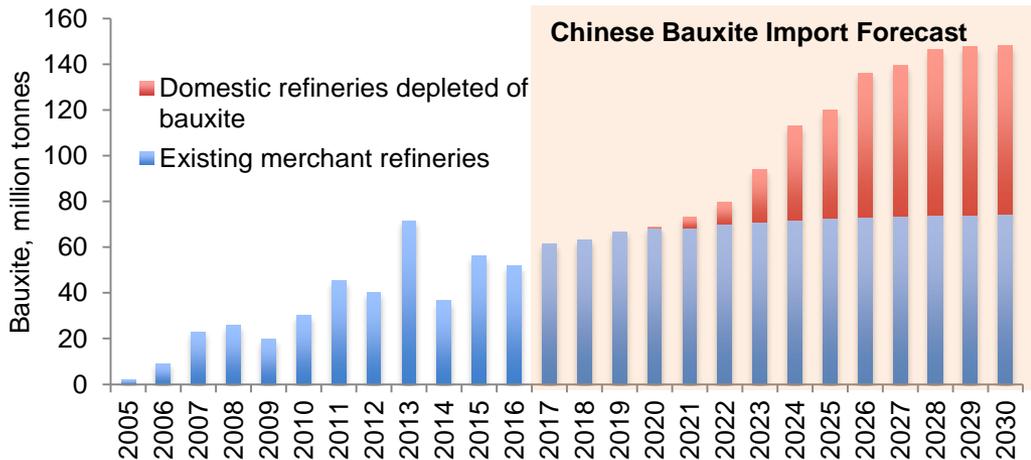
## Forecast to grow by 68mtpa by 2025



### Declining domestic bauxite quality adding to growth

Decline affecting key alumina producing provinces

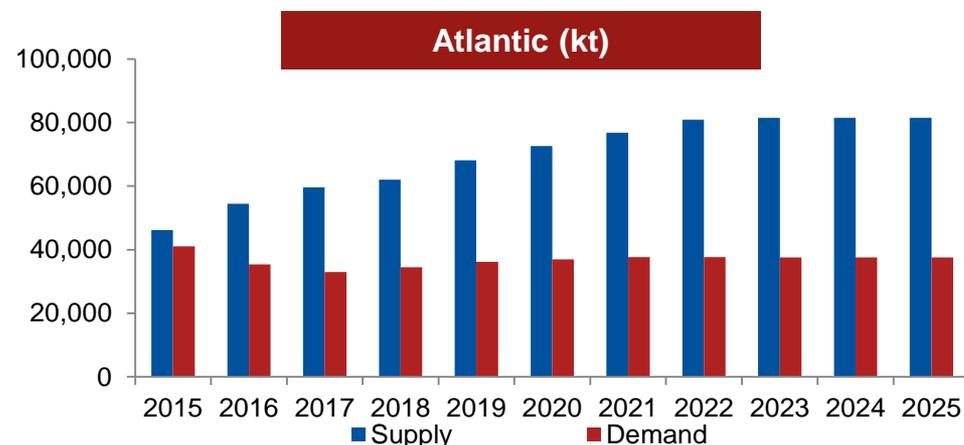
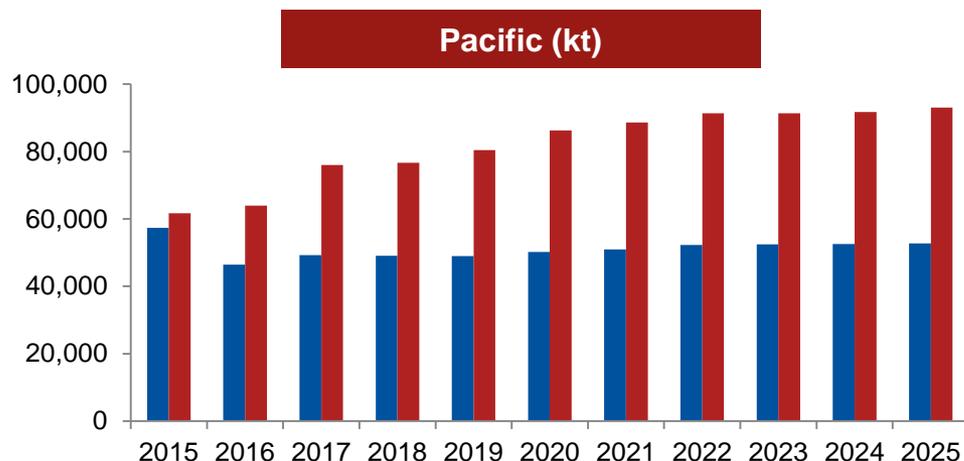
Shanxi, Henan likely to relocate refining largely to coast (e.g. Shandong, Liaoning, Guangxi)



Source: Top: CM Group, January 2017  
Bottom: CM Group, February 2017

# Third party bauxite balance

## Atlantic bauxite meeting shortfall in Pacific



### Cost of third party bauxite expected 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

# Malaysian moratorium on mining

Extended to 30 June 2017



*Loading bauxite from stockpile in Kuantan, April 2017*



*Roads to Kuantan Port, April 2017*

## **Miners with a permit are allowed to export**

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Bauxite exports are expected to be up to c.8.0mtpa

Washing is prohibited in Kuantan

Mining costs have risen and prices are low

Margins are too thin, especially given grade variability

## **The moratorium is working**

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Exports are much less than high of 24mtpa (Kuantan 2015)

The government is collecting its taxes

The environment is clean by comparison

# Indonesian export ban

## Temporary relaxation



**Government Regulation No.1/2017**



**ESDM No.6/2017**



**ESDM No.5/2017**



**Ministry of Trade No.19/2017**

### Temporary relaxation and not a lifting of the ban

- Relaxes the ban for five years
- Very specific and tight regulatory requirements
- Benchmark bauxite prices established to calculate taxes

### Objectives of government

- Increase investment in infrastructure
- Increase the participation of locals and generate jobs
- Protect the environment
- Generate more tax revenue
- Incentivise value-add projects

**Government Regulation No. 1**, effectively relaxed the ban  
**ESDM Decree No.5 & 6**, further explains the conditions for exports  
**Ministry of Trade No. 19**, presents Benchmark Prices

# Indonesian export ban

## Temporary relaxation



*Antam's CGA project (PT ICA) in Tayan, Indonesia*  
Source: PT ICA



*PT Well Harvest Winning Alumina Refinery in Kendawangan, Indonesia*  
Source: CM Group

### Licensee who has or will build value-add plant can export

Must be a direct shareholder of the value-add project

Only two existing projects that could qualify

### Only washed bauxite can be exported

Minimum  $\text{Al}_2\text{O}_3 = 42\%$

Existing projects represent c.4mtpa of potential exports

### Independent companies to monitor progress of value-add projects

New value-add projects with genuine intention to build will be allowed to export bauxite

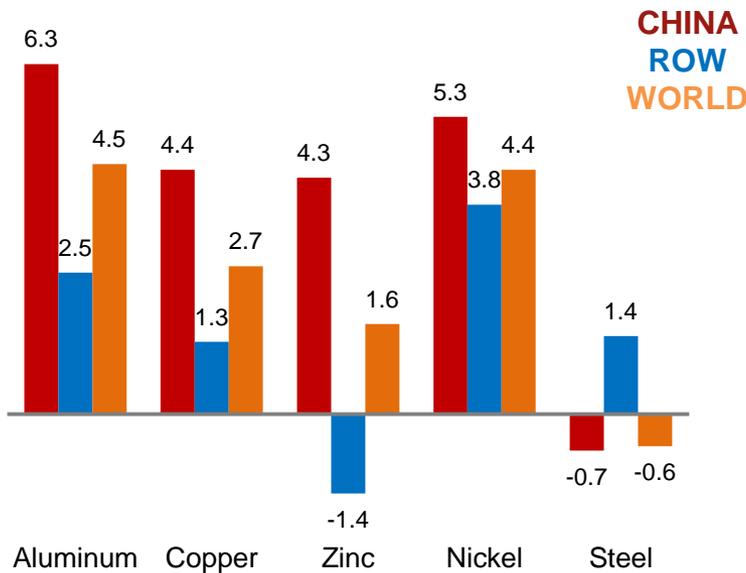
Evaluations against key milestones will be performed

Must achieve at least 90% of the assessed milestone

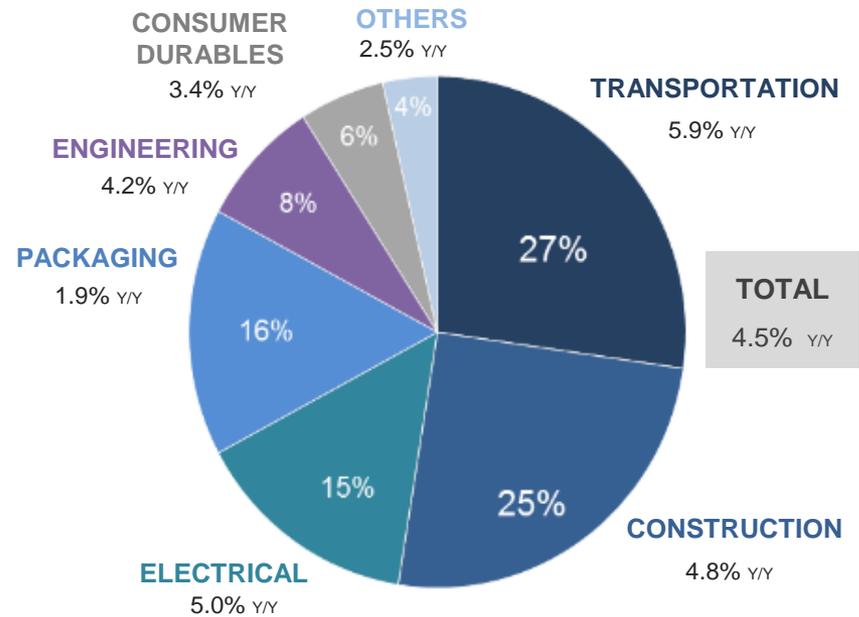
# Aluminium demand remains strong

## Led by transportation and construction

**2016 Annual Consumption Growth by Metal %**



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



# Announced refinery projects

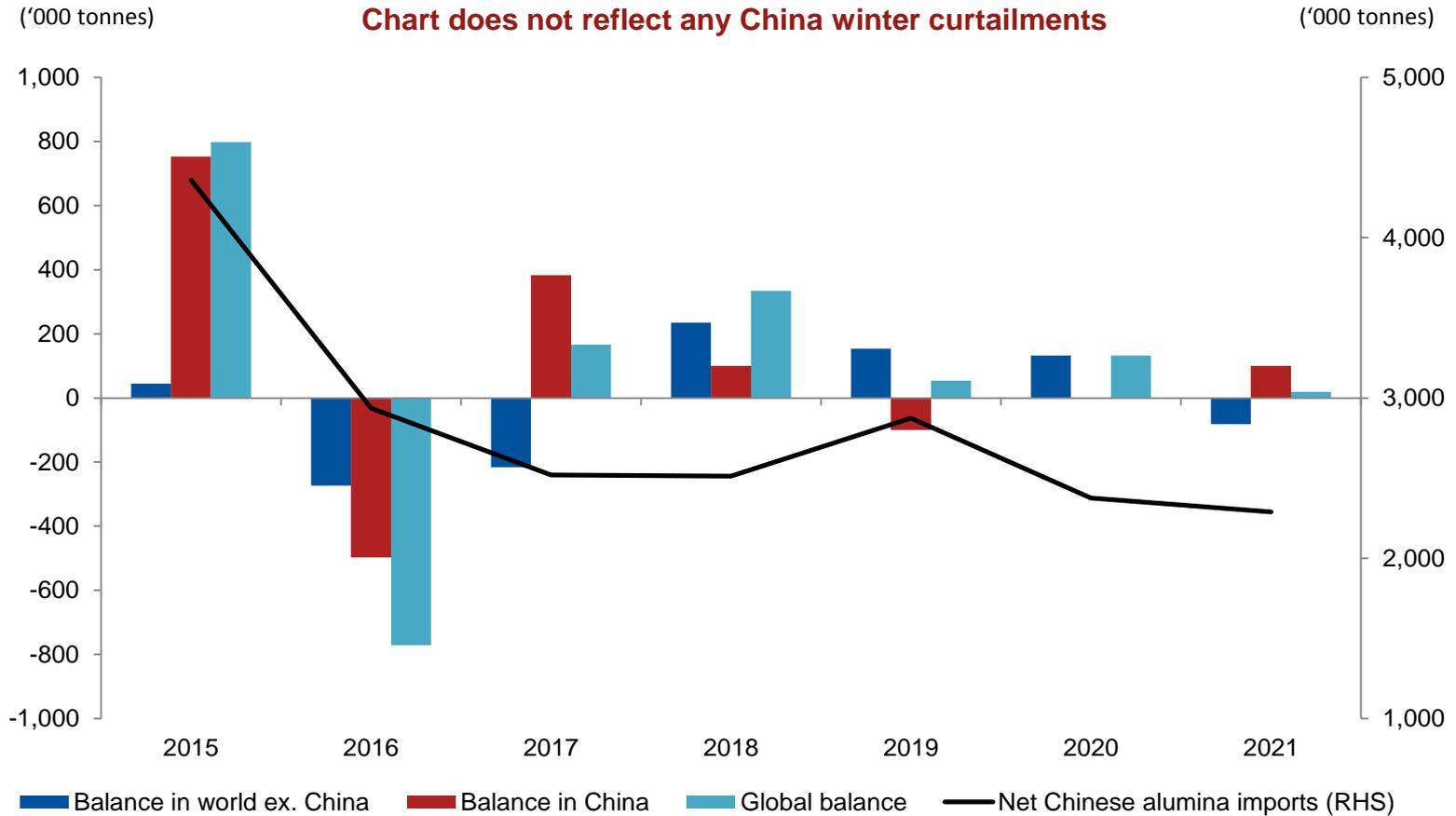
## Modest supply growth outside of China

### Upcoming Alumina Growth 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 2018. A 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 was scheduled for 2017 but has not been committed to.
		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	Various	500	7,200	800	0	Greenfield	
	China	China Various brownfield	Various	3,700	0	0	0	Brownfield	
TOTAL WORLD				5,200	10,200	1,800	1,000		
TOTAL CHINA				4,200	7,200	800	0		
TOTAL ROW				1,000	3,000	1,000	1,000		

# Alumina balance

## Asia smelting growth to keep alumina market tight



# Potential China curtailments

## Seeking to reduce haze and smog in Northern China



Beijing Smog, January 2017

### Ministry of Environmental Protection proposing curtailments

30% reduction in aluminium and alumina production

Curtailment to be during the winter heating season

Affects Beijing, Tianjin, Hebei and surrounding areas

### Alumina cuts expected to exceed aluminium's

MEP proposal to affect key alumina provinces

Net effect could be 2.7 to 3.4 mt of alumina lost<sup>(1)</sup>

High utilisation rates reduce opportunity to ramp up elsewhere

Million tonnes	Alumina	Aluminium
Production 2017	68.2	36
Affected annual production	27.2	10.6
30% Cut	8.2	3.2
Net effect (4 months)	2.7	1.1

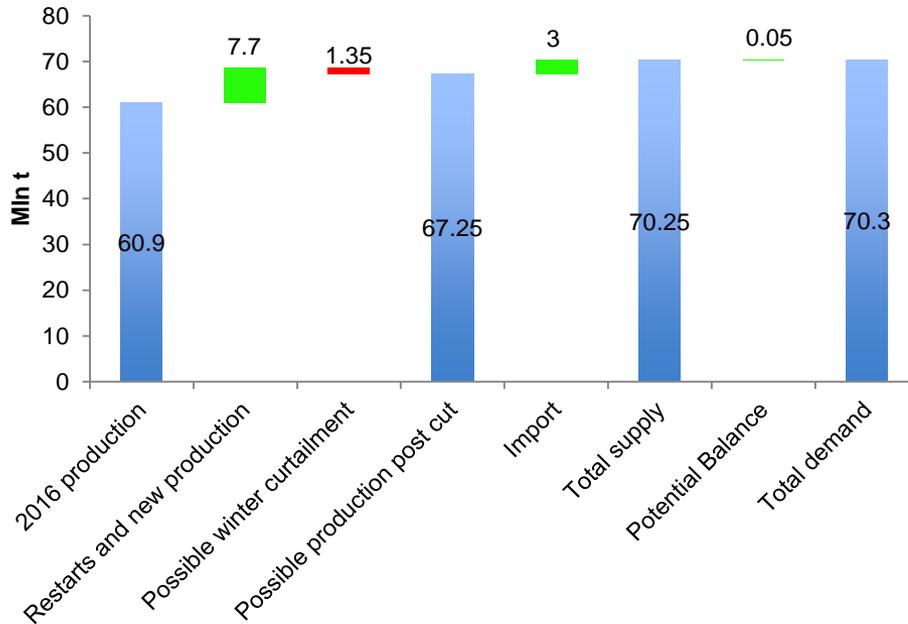
Source: CM Group

<sup>(1)</sup> Net effect over the winter heating period of 4-5 months

# Potential China curtailments

## Seeking to reduce haze and smog in Northern China

2017 China Alumina Balance



Assuming winter cut takes full effect (2 months in 2017)

### Potential industry actions and impacts

- SOEs likely to enact final curtailment proposal
- Small, high cost private companies could close
- Large private companies could lobby for change
- Expansion or relocation plans could change
- Production costs could increase



# Appendices

# AWAC

## Alumina refinery portfolio

Country	Refinery	Ownership	AWAC share of nameplate capacity <sup>(1)</sup> (MTPY)	Percentage of AWAC total nameplate capacity	Bauxite mine integration
Australia	Kwinana Pinjarra Wagerup	AWAC (100%)	2.2 4.2 2.6	63%	✓
Brazil	Sao Luis	AWAC (39%) Rio Tinto Alcan Inc (10%) Aluminio (15%) South32 (36%)	1.4	10%	✓
Spain	San Ciprian	AWAC (100%)	1.5	11%	[2]
US	Point Comfort <sup>[3]</sup>	AWAC (100%)	2.3	16%	[2]
<b>Total</b>			<b>14.2</b>	<b>100%</b>	

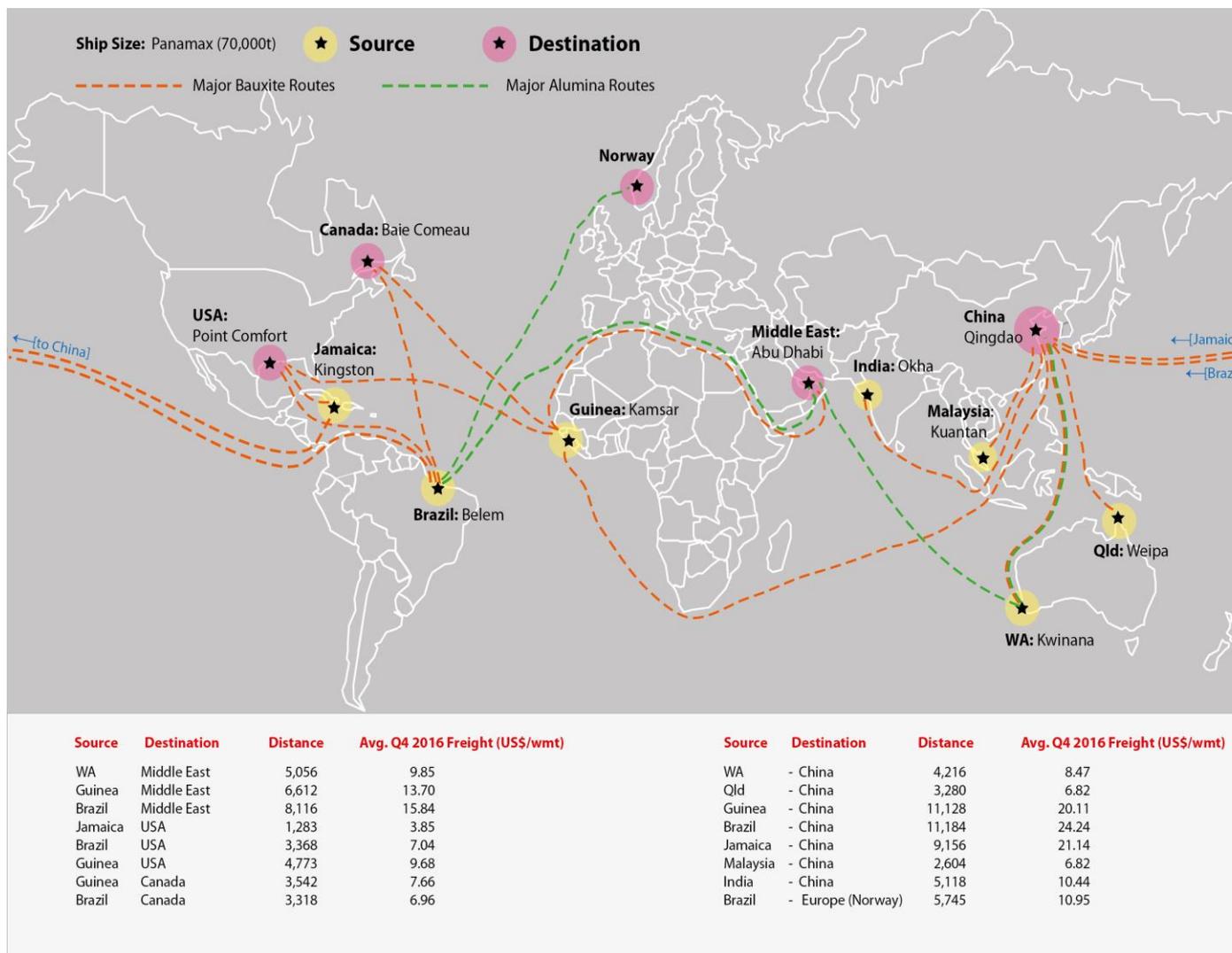
**AWAC's share of Ma'aden alumina refinery nameplate capacity is 450,000 tonnes and is expected to be at full operating capacity in 2017**

(1) Nameplate capacity is an estimate based on design capacity and normal operating efficiencies and does not necessarily represent maximum possible production. Excludes additional creep opportunities.

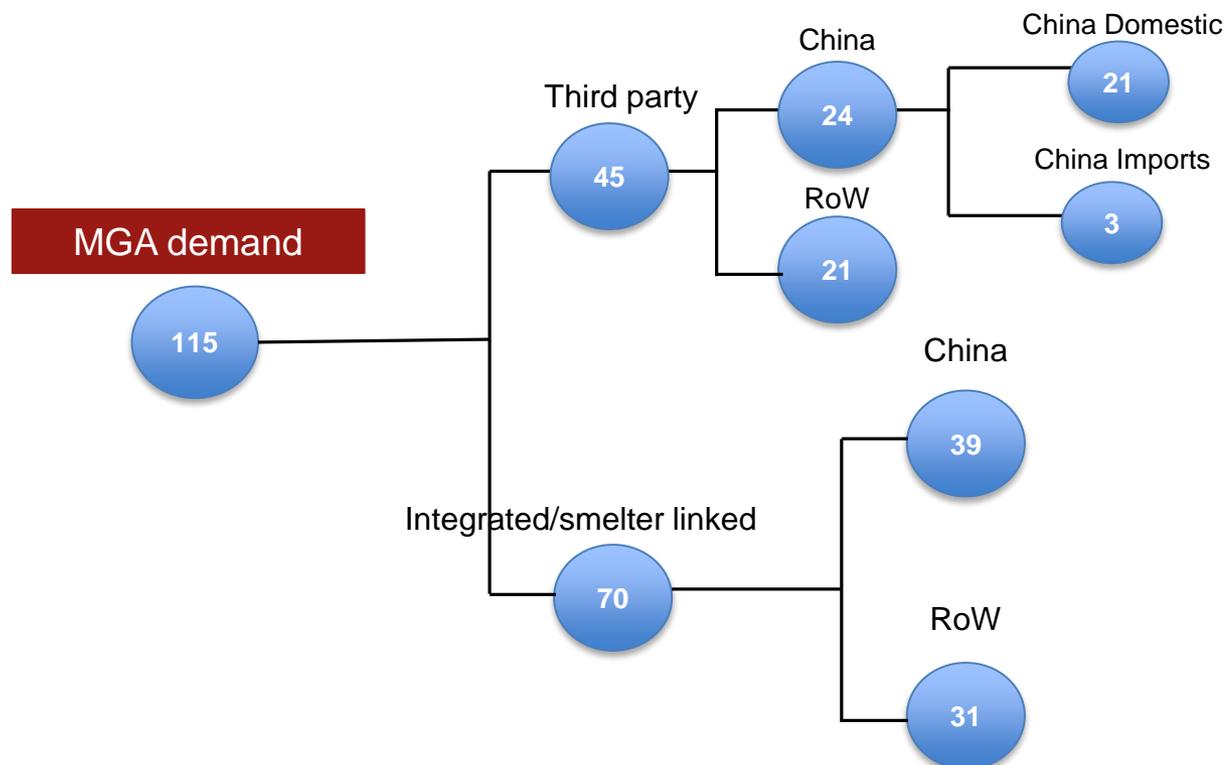
(2) Bauxite is supplied from mines in which AWAC has an equity interest

(3) The refining capacity at Pt Comfort was fully curtailed by 30 June 2016.

# Key bauxite/alumina freight routes



# 2016 Metallurgical Grade Alumina Market Overview



# 2016 Bauxite Market Overview

