



HYDRO

Depleting bauxite resources - the Chinese challenge

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CRU conference, London

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Cautionary note in relation to certain forward-looking statements

Certain statements included within this announcement contain forward-looking information, including, without limitation, those relating to (a) forecasts, projections and estimates, (b) statements of management's plans, objectives and strategies for Hydro, such as planned expansions, investments or other projects, (c) targeted production volumes and costs, capacities or rates, start-up costs, cost reductions and profit objectives, (d) various expectations about future developments in Hydro's markets, particularly prices, supply and demand and competition, (e) results of operations, (f) margins, (g) growth rates, (h) risk management, as well as (i) statements preceded by "expected", "scheduled", "targeted", "planned", "proposed", "intended" or similar statements.

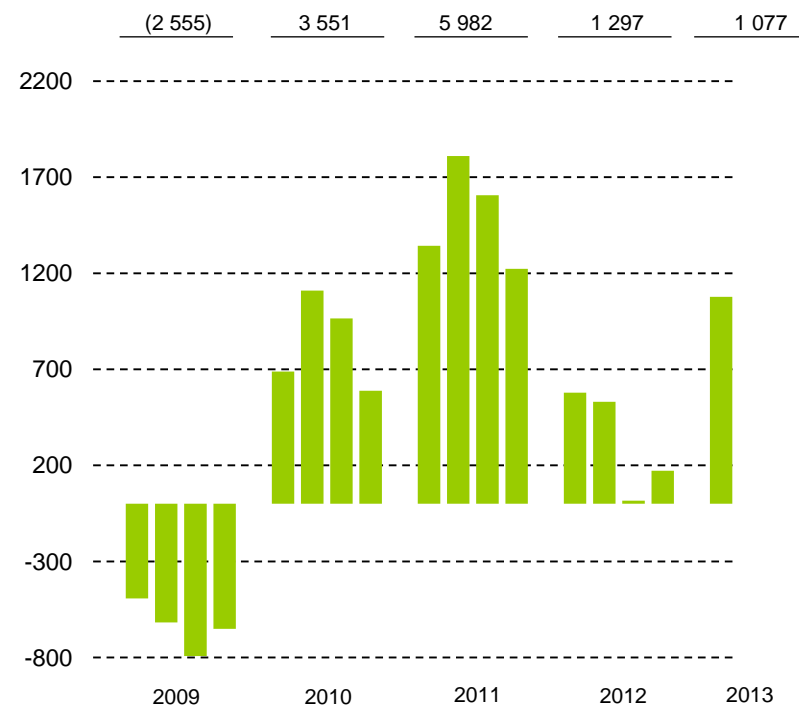
Although we believe that the expectations reflected in such forward-looking statements are reasonable, these forward-looking statements are based on a number of assumptions and forecasts that, by their nature, involve risk and uncertainty. Various factors could cause our actual results to differ materially from those projected in a forward-looking statement or affect the extent to which a particular projection is realized. Factors that could cause these differences include, but are not limited to: our continued ability to reposition and restructure our upstream and downstream aluminium business; changes in availability and cost of energy and raw materials; global supply and demand for aluminium and aluminium products; world economic growth, including rates of inflation and industrial production; changes in the relative value of currencies and the value of commodity contracts; trends in Hydro's key markets and competition; and legislative, regulatory and political factors.

No assurance can be given that such expectations will prove to have been correct. Hydro disclaims any obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

Hydro: a resource rich global aluminium company

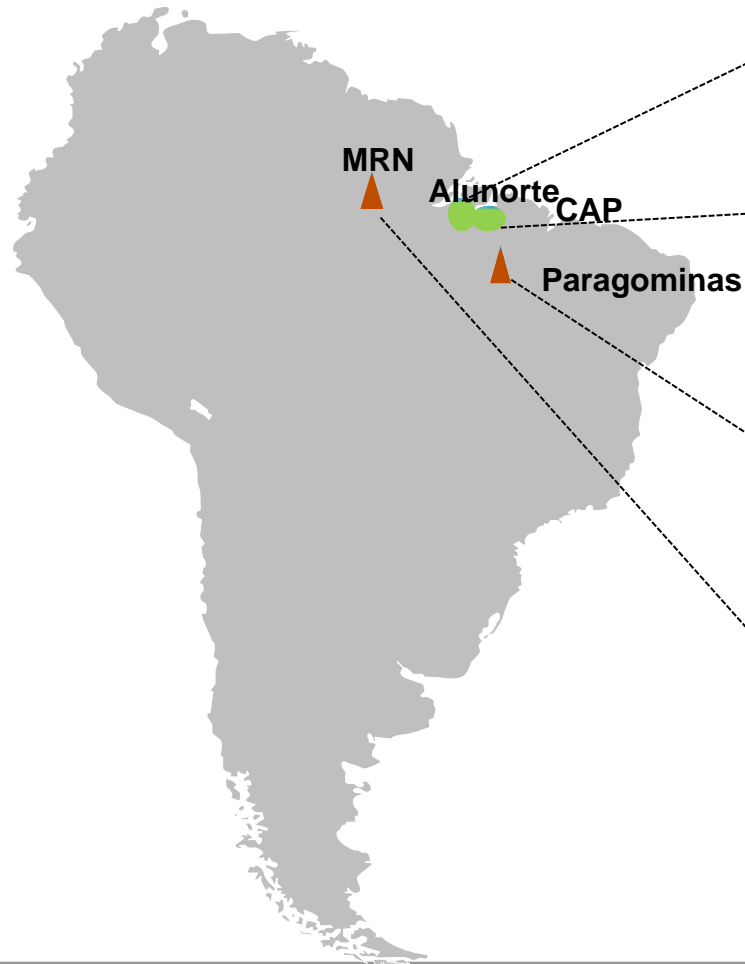
- Based in Norway with operations in 40 countries
- 22 000 employees
- Operating revenues*
 - 2011: NOK 72 billion
 - 2012: NOK 64 billion
- Current market capitalization
 - NOK 52 billion/USD 9 billion
- 34% owned by Norwegian state

Hydro underlying EBIT quarterly, NOK million*



* Extruded Products classified as discontinued operations, and thereby excluded from revenues and underlying EBIT for 2011 & 2012. Figures for 2012 are adjusted reflecting IAS 19R.

Hydro's B&A positions



Alunorte refinery:

- Ownership: 92%
- Capacity: 6.3million tons

CAP refinery project:

- Ownership: 81%
- Capacity: 1st phase: 1.86 m.t., can be expanded to 7.6 m.t.
- Postponed due to weak market. Ready as soon as conditions improve
- One of the best refinery projects in the World.

Paragominas mine:

- Ownership: 100% by 2016
- Capacity: 9.9 m.t.
- Possible expansion to 15 m.t.
- Pipeline capacity of 15 m.t.

Trombetas mine:

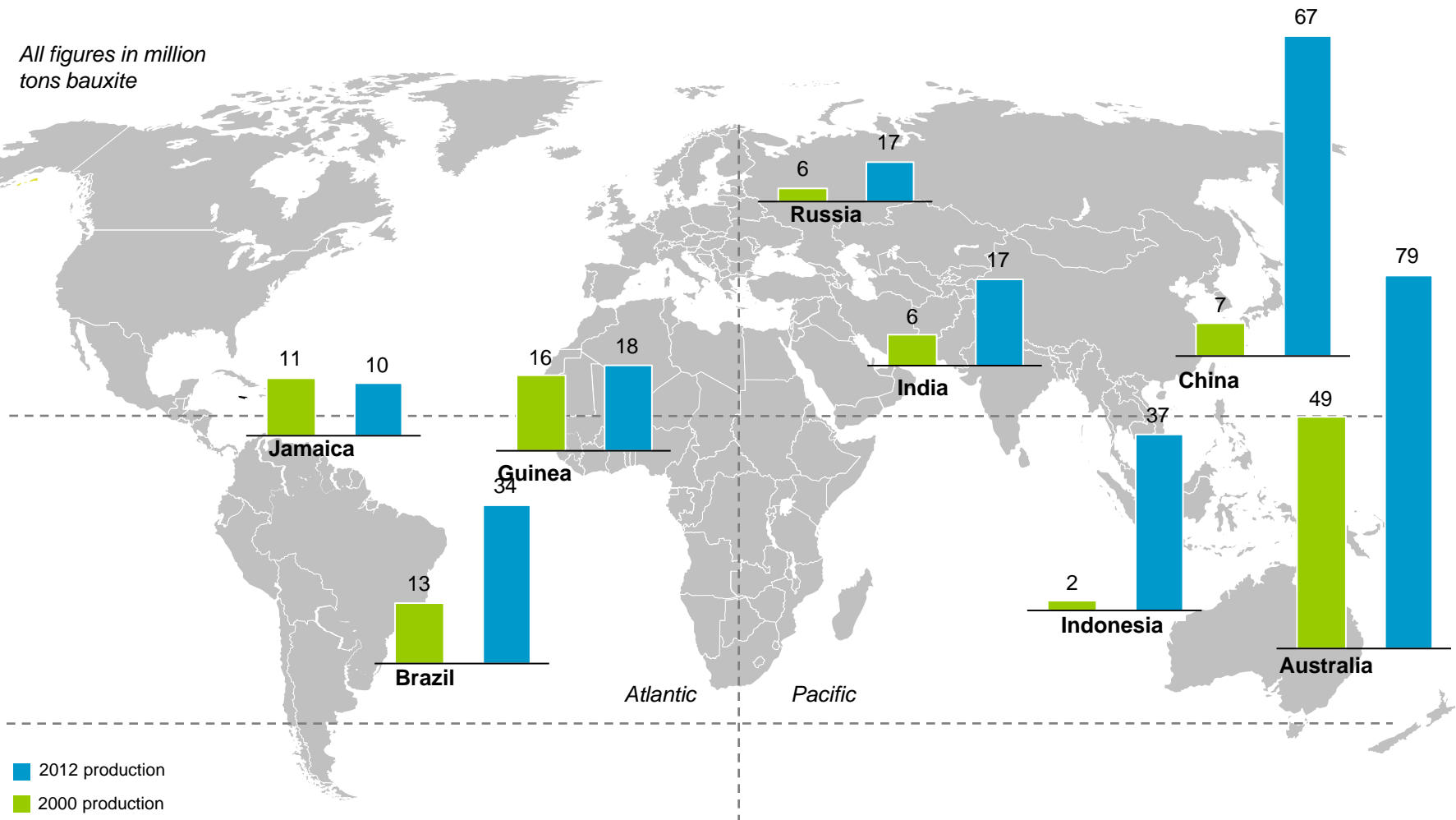
- Ownership: 5%
- Long-term off-take with Vale for their 40% share.
- Production 2012 : 17million t.



Bauxite – Industry Structure

Production of bauxite 2000 and 2012

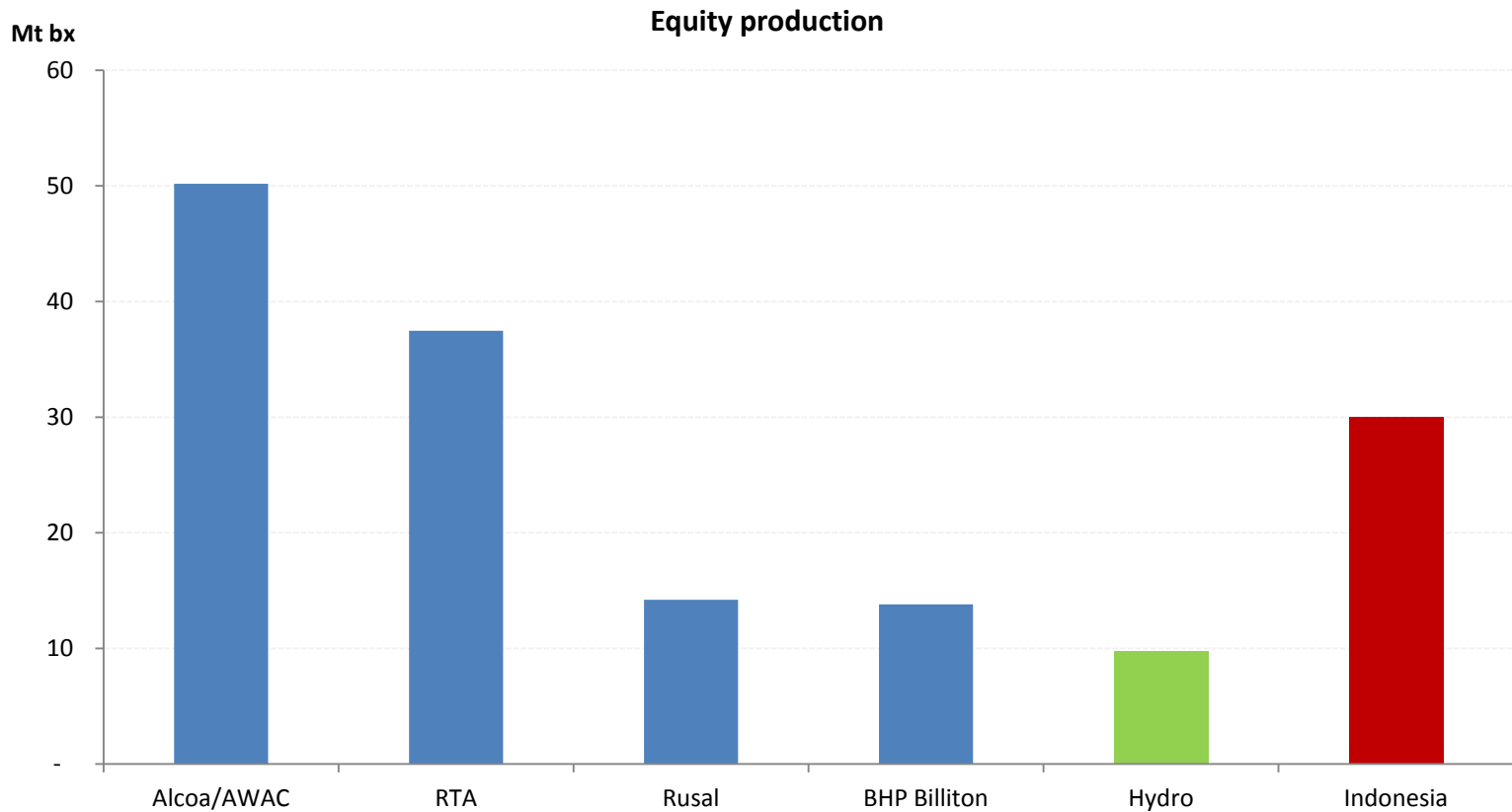
All figures in million tons bauxite



■ 2012 production
■ 2000 production

Source: CRU, Hydro

Biggest bauxite producers – equity based 2012



Source: CRU, Hydro Analysis

Hydro: Based on 100% Paragominas and 5% MRN



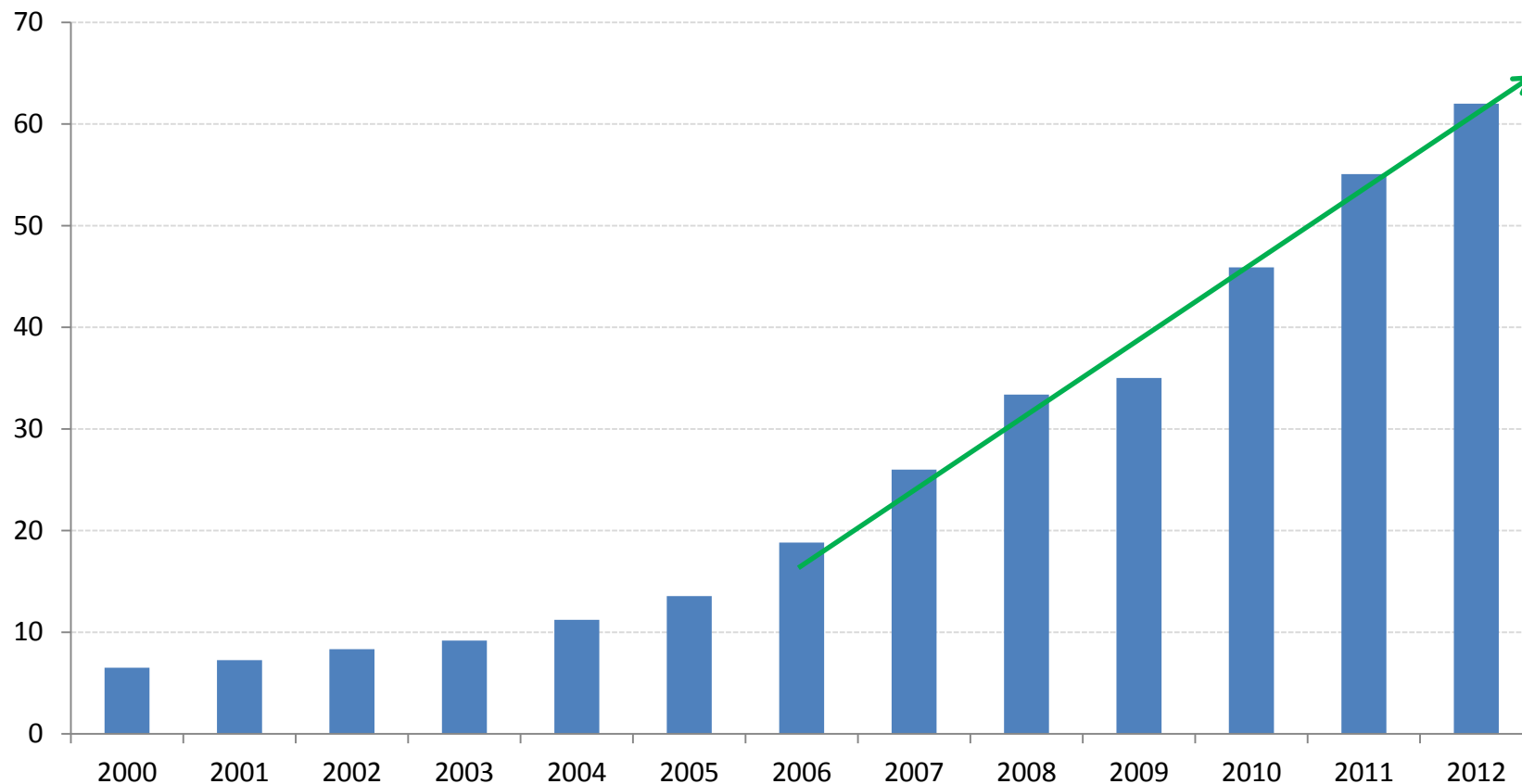


**China's bauxite
position going forward**

Chinas bauxite production 2000 – 2012

Increasing annually by 8 mtpy since 2006

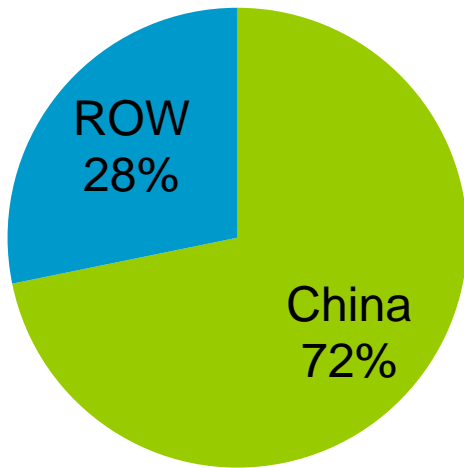
million tons



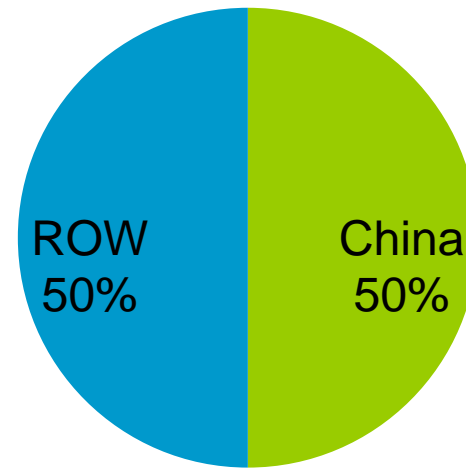
Source: CRU

China's estimated share of 3rd party traded bauxite

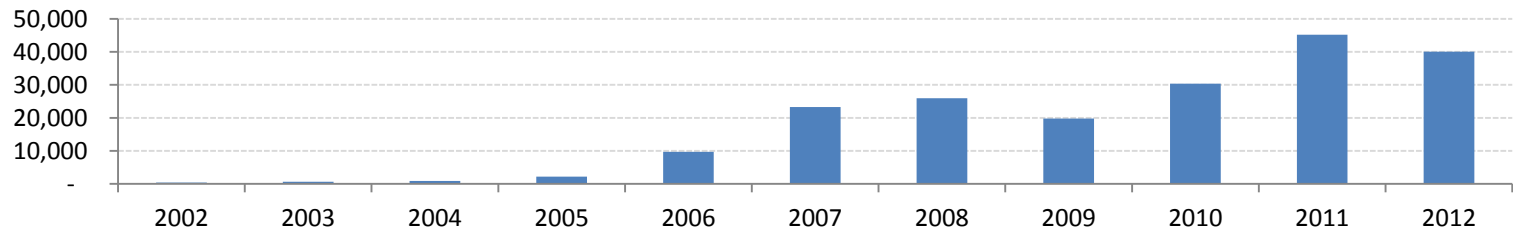
Non-integrated refinery capacity



World imported bauxite, 80 mton



Chinese bauxite imports

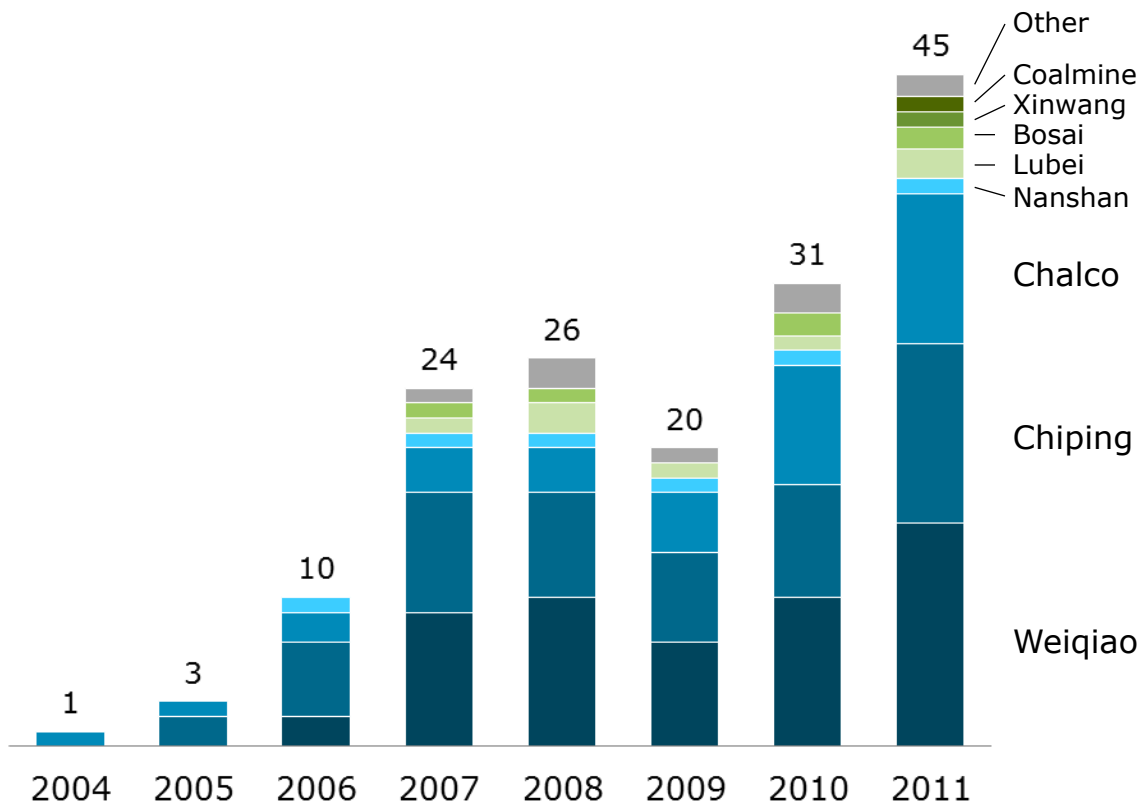


Source: CRU, China Custom

80% of bauxite imports consumed by three main players

Chinese bauxite import per player

Figures in million tons, 2004 - 2011



Comments:

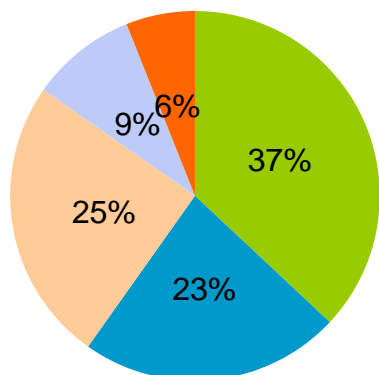
- Three largest importers accounting for ~ 80% of imported bauxite
- Chalco with ~ 10 million tons of bauxite imports, distributed over several refineries in different provinces

Source: CMGroup

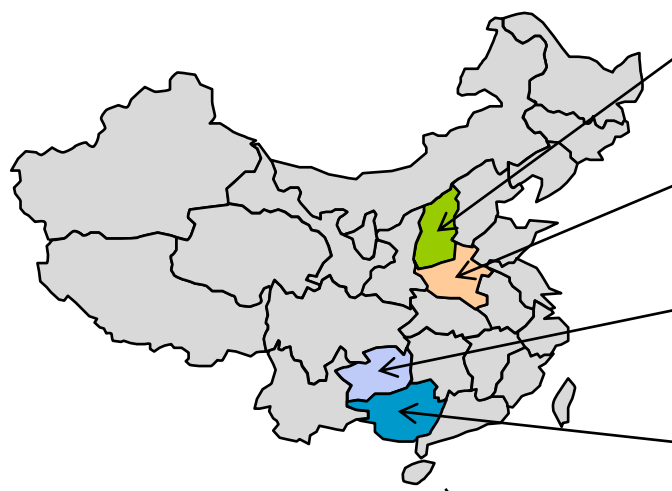
Chinese bauxite production is concentrated in four regions, mainly with poor bauxite quality

Bauxite production per region

Prod. 2012: ~67 Mt



Low A/S-ratios among largest producing regions



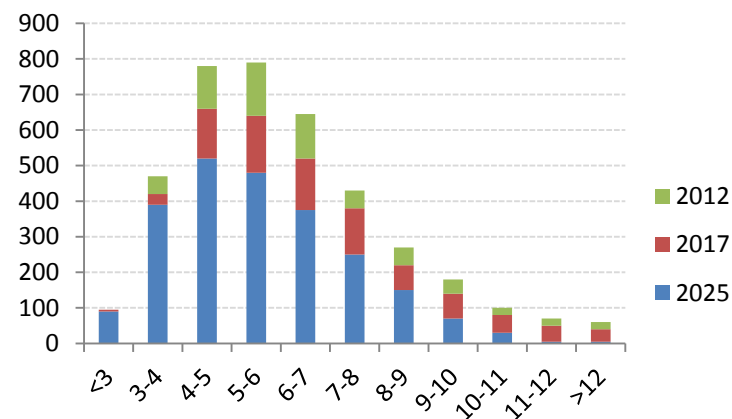
Shanxi:	Reserves 0.8bt Avg A/S ratio: 5-6
Henan	Reserves 0.4bt Avg A/S ratio: 4.5-5.5
Guizhou	Reserves 0.3bt Avg A/S ratio: 7-8
Guangxi	Reserves 0.7bt Avg A/S ratio: 5.8-6.8

- Total bauxite prod. in China in 2012 estimated at ~67 Mt, with four provinces accounting for 93 % of production

The bauxite quality in China is gradually decreasing, pushing up refinery costs

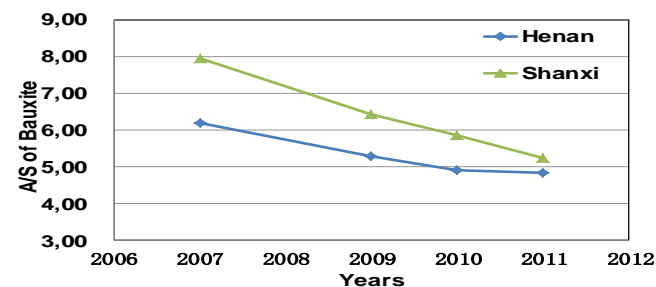
- Bx quality dropping faster than expected
- Driving up refining cost
- Above 20% of total bauxite production goes to the refractory business
 - Attracting the higher quality – due to willingness to pay a higher price
- Some refineries will run out of own reserves by 2016-20
- Floatation and sintering processes not competitive from a cost perspective

Domestic bauxite - estimated reserves



Source: CMGroup

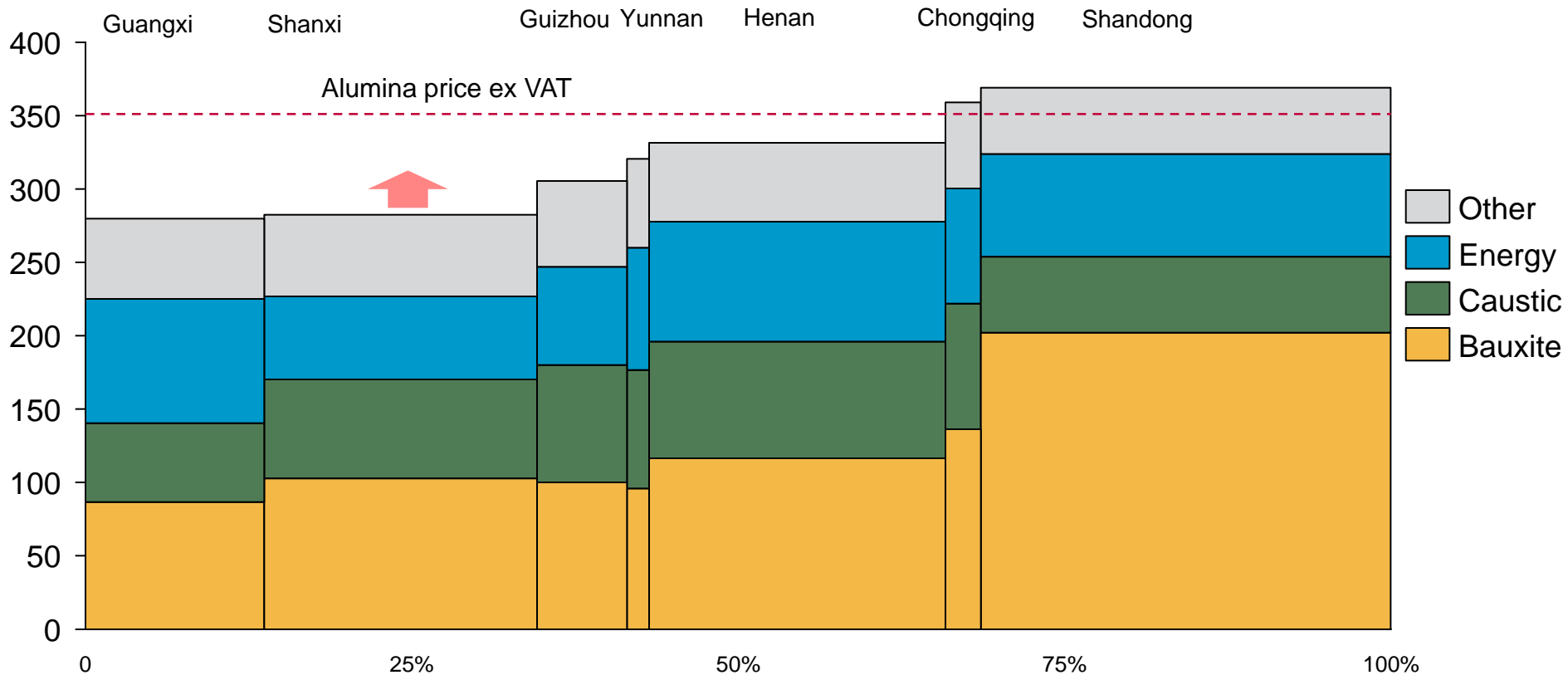
China's bauxite quality is decreasing fast



Source: Chalco presentation

Currently 30-40% of Chinese refineries are cash negative. And costs will increase

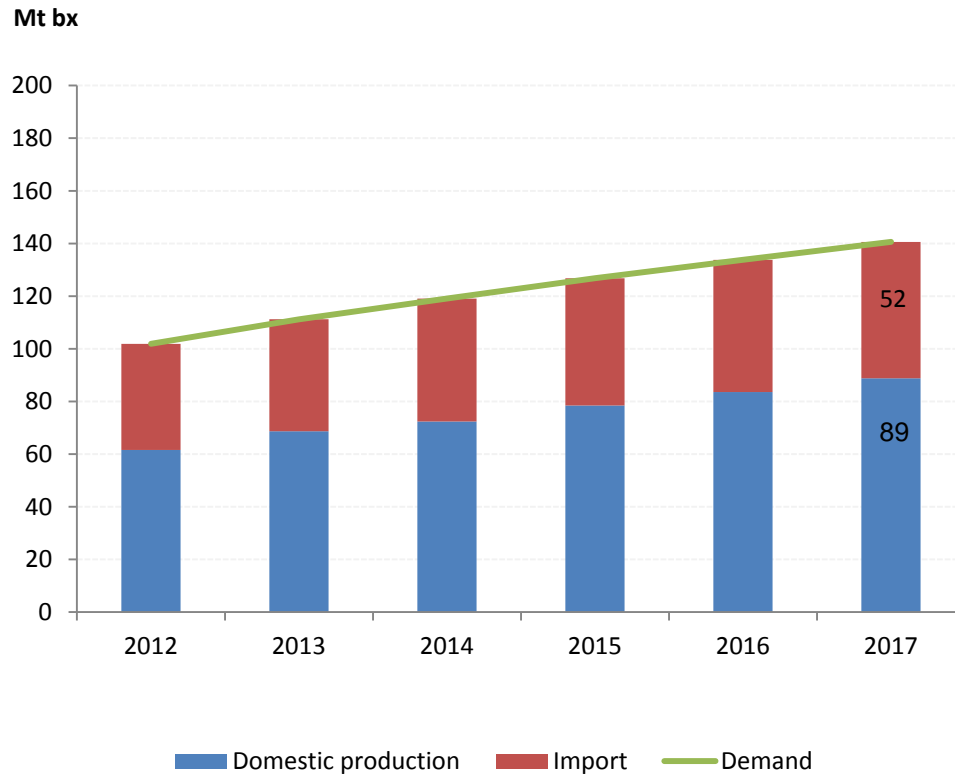
Cash cost curve, Chinese alumina refineries 2012
Ex. VAT, Ex-works



Source: CMGroup

China dependant on bauxite import also in the future

Bauxite equivalents

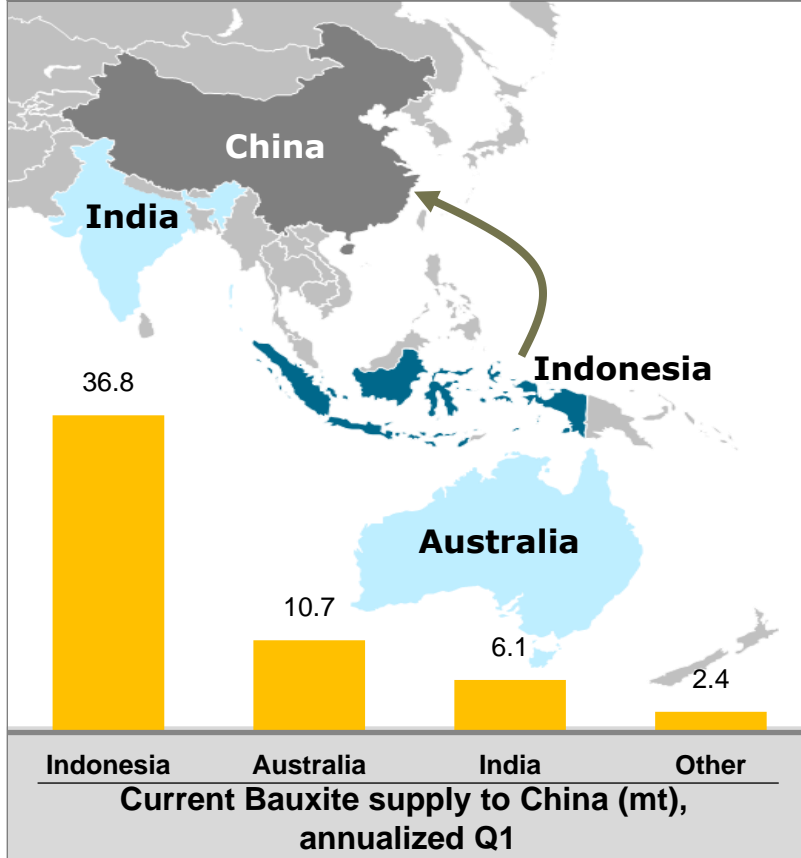


- High degree of uncertainty related to future bx prod levels in China
- 2020 production: Different analysts ranging between 85 – 110 million tons
- China still relying upon bauxite import long-term – but how much?

Source: CRU

Indonesia: Most important bauxite supplier to China restricts export short term, not sustainable at current levels long term

Indonesia largest supplier of gibbsite bauxite to China by far..



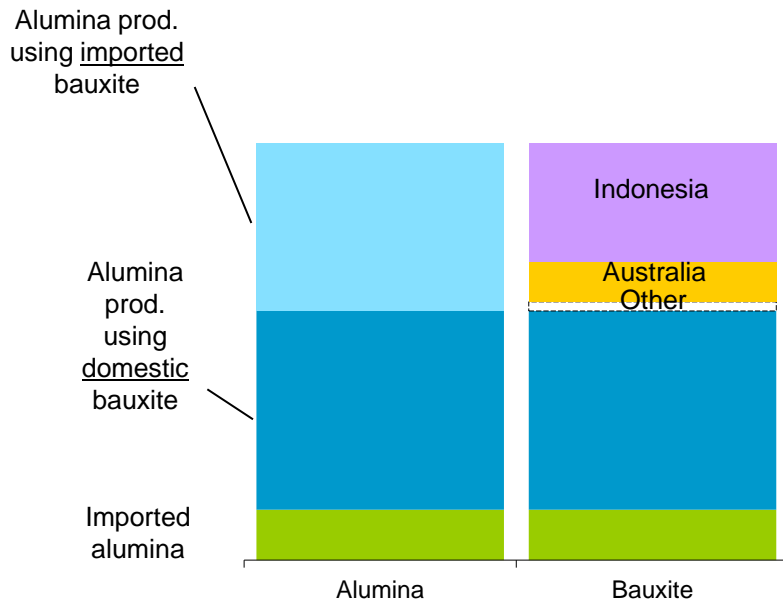
..but future production in Indonesia is expected to decrease significantly

- **Short term:** Government will restrict and possibly ban export
 - Increased export tax to 20% by 2012
 - Announced ban of export from 2014, uncertainties regarding implementation
 - New refinery projects are linked to continuation of bauxite exports
- **Long term:** Production will decrease due to: (independent of policies)
 - Scattered resources
 - Inefficient mining practices
 - Competition from more profitable palm oil production
 - Resources to support local refineries

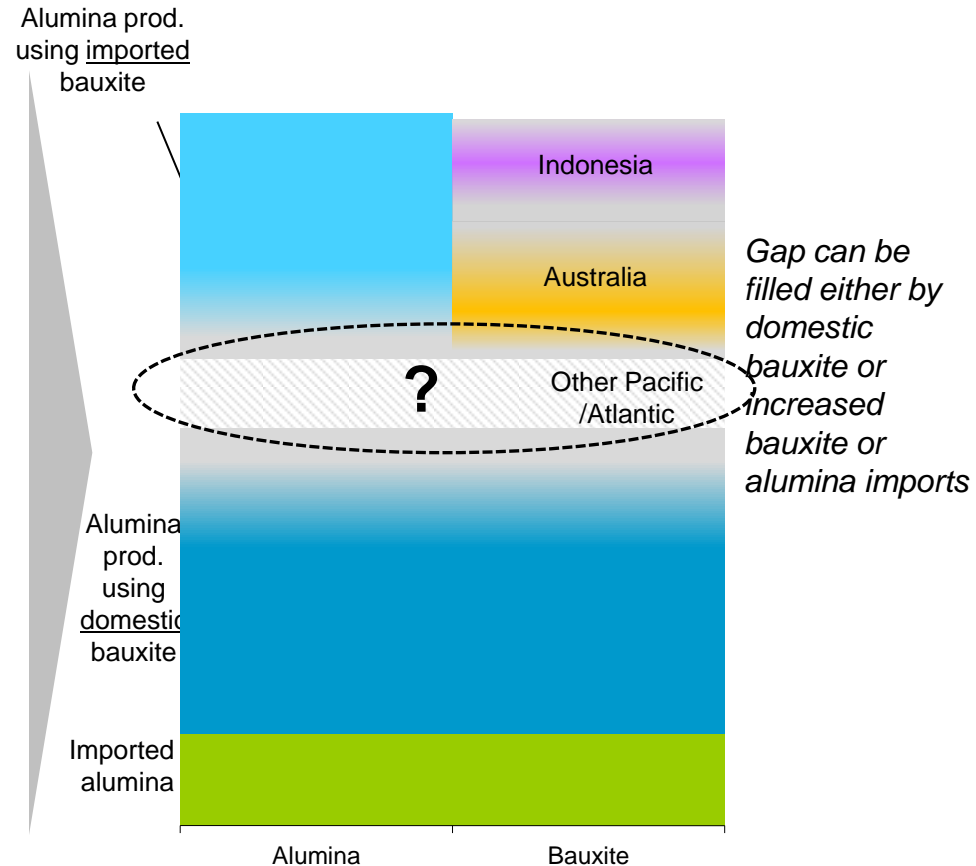
Which alternatives exist for China going forward?

Increased Chinese bauxite demand could lead to a supply gap!

2012

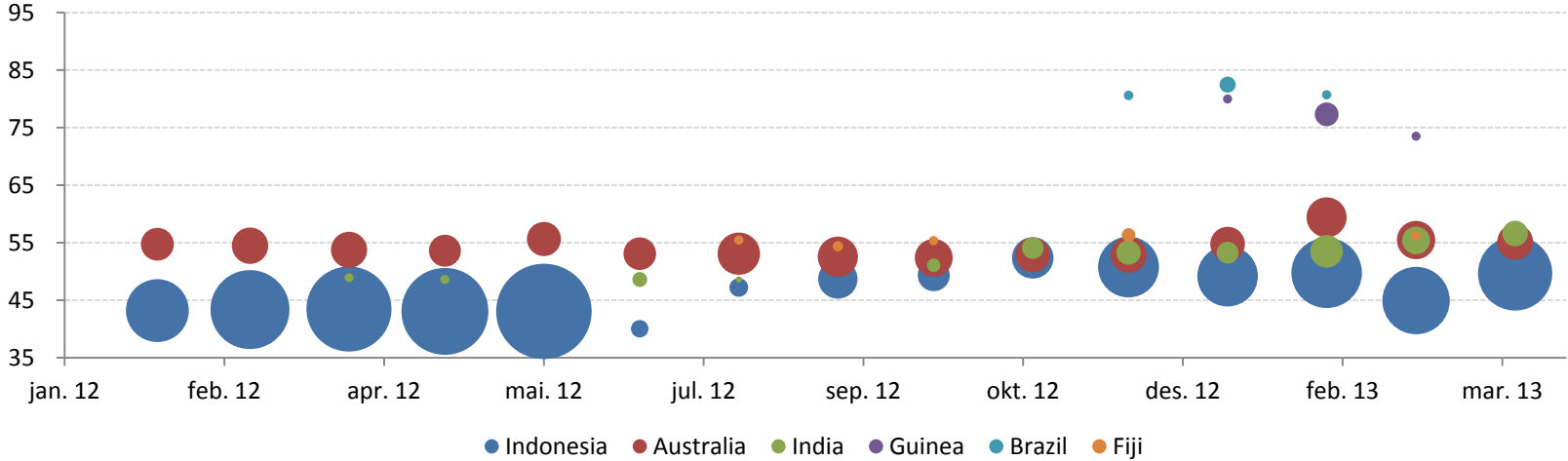
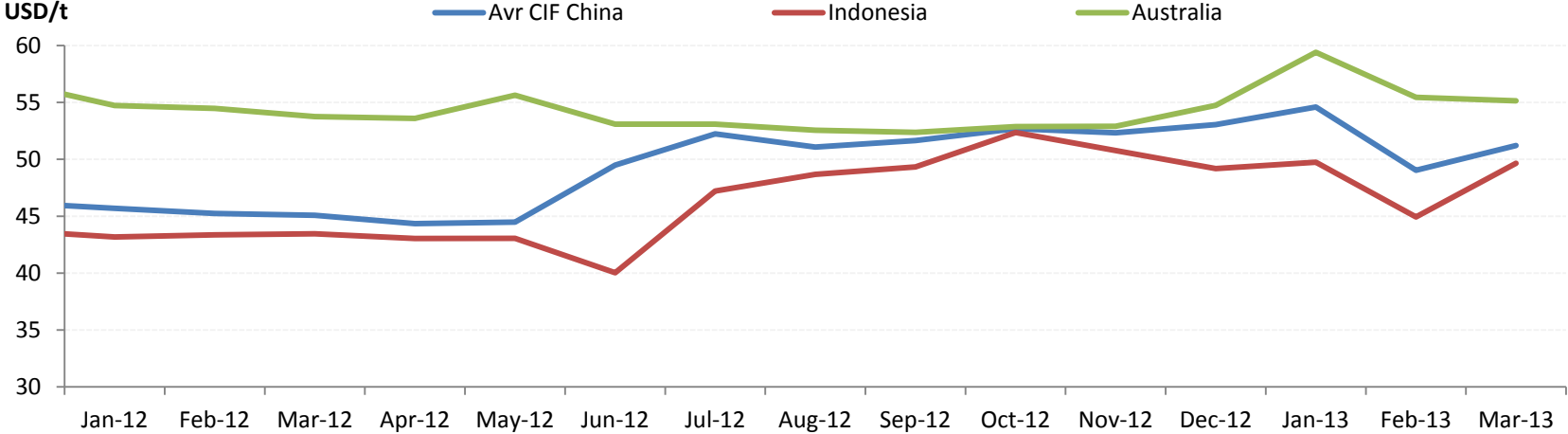


2022



Source: Hydro analysis

Bauxite CIF China



Source: China Custom



Bauxite CIF China – value for the customer after quality adjustment

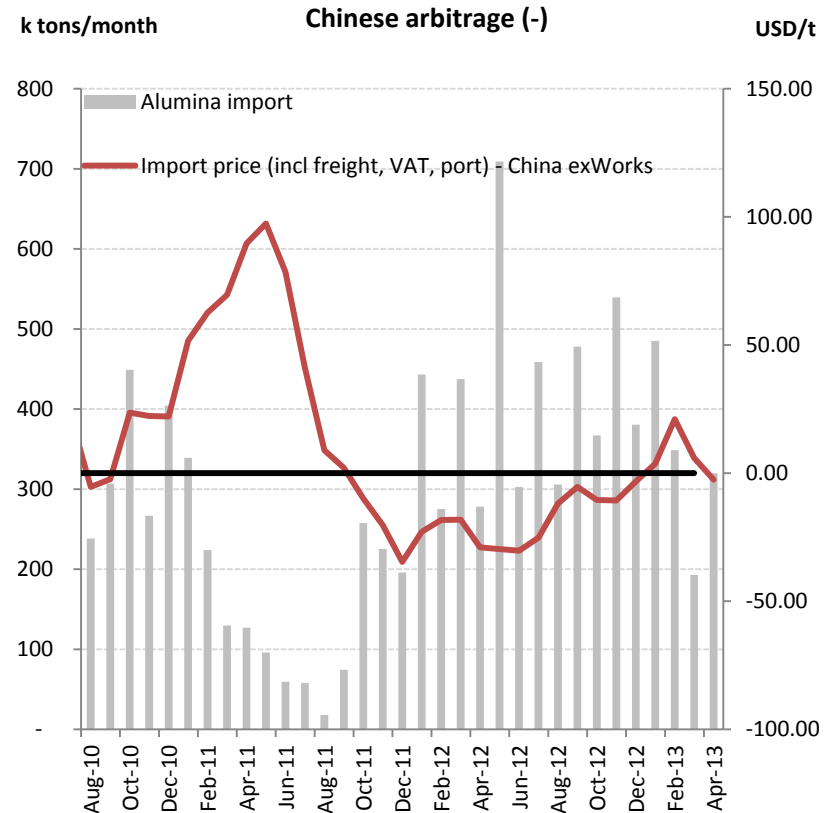
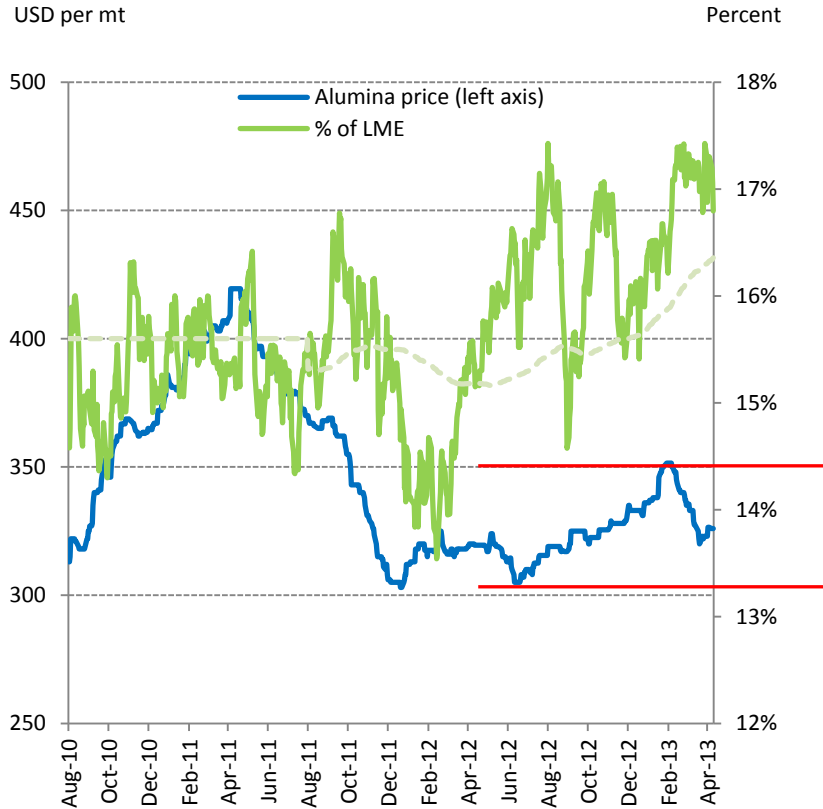
	Indonesia	CBG (Guinea)	Weipa
A/S ratio	8	25	8
FOB Price	38	42	41
CIF China*	50	77	54
Quality adj	0	-17	0
Net CIF quality adjusted China	50	60	54

For low-temp refineries

For high-temp refineries

- Bauxite price from Indonesia likely to increase
- Due to quality effects, Guinean bauxite could be competitive to China

Increased Chinese refinery cost could drive alumina imports higher



Source: Platts, China Customs



Concluding remarks

Bauxite development

- China to be increasingly dependent on bauxite import over the next 10 years
- Domestic refining cost to increase
- Indonesia likely to have 1-3 smaller refineries the next 2-4 years and reduce their bx export
- Weipa expansion to 36/ 50 million tons?
- Uncertain whether Atlantic bauxite is needed for China L-T

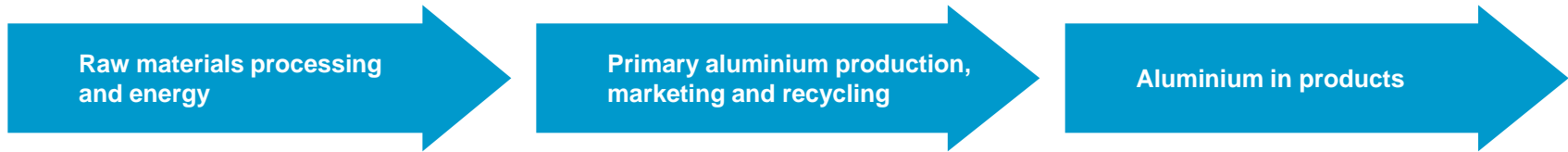






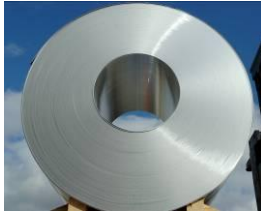

Key factors to watch

- China domestic bx production & quality dev.
- Indonesia export policy



Strong positions across aluminium value chain



Raw materials processing and energy		Primary aluminium production, marketing and recycling		Aluminium in products	
Bauxite & Alumina	Energy	Primary Metal	Metal Markets	Rolled Products	Extruded Products
					
<ul style="list-style-type: none"> • Bauxite capacity 10.8 million tonnes • Expansion potential to 15.8 million tonnes • Alumina capacity 6.3 million tonnes • Expansion potential to 8.2 million tonnes first phase CAP • Long-term sourcing contracts for bauxite and alumina 	<ul style="list-style-type: none"> • Long-term power supply secured • 9.5 TWh of renewable energy production in Norway 	<ul style="list-style-type: none"> • 2.5 million tonnes primary capacity • Improving cost position • Leading in technology 	<ul style="list-style-type: none"> • 3.8 million tonnes (primary, remelt, recycling and cold metal) • Expertise in materials • Flexible system 	<ul style="list-style-type: none"> • 1 million tonnes • Close to customers • Innovation • Market leading in litho and foil 	<ul style="list-style-type: none"> • 0.6 million tonnes • Announced Sapa joint Venture, 50/50 with Orkla, pending regulatory approval

100% of volumes for assets that are fully consolidated and pro rata volumes for other assets.