ALUMINA LIMITED

What will the impact of the Indonesian bauxite ban be on the bauxite, alumina and Chinese primary sectors?

Andrew Wood
Group Executive Strategy & Development
Alumina Limited

andrew.wood@aluminalimited.com

Disclaimer

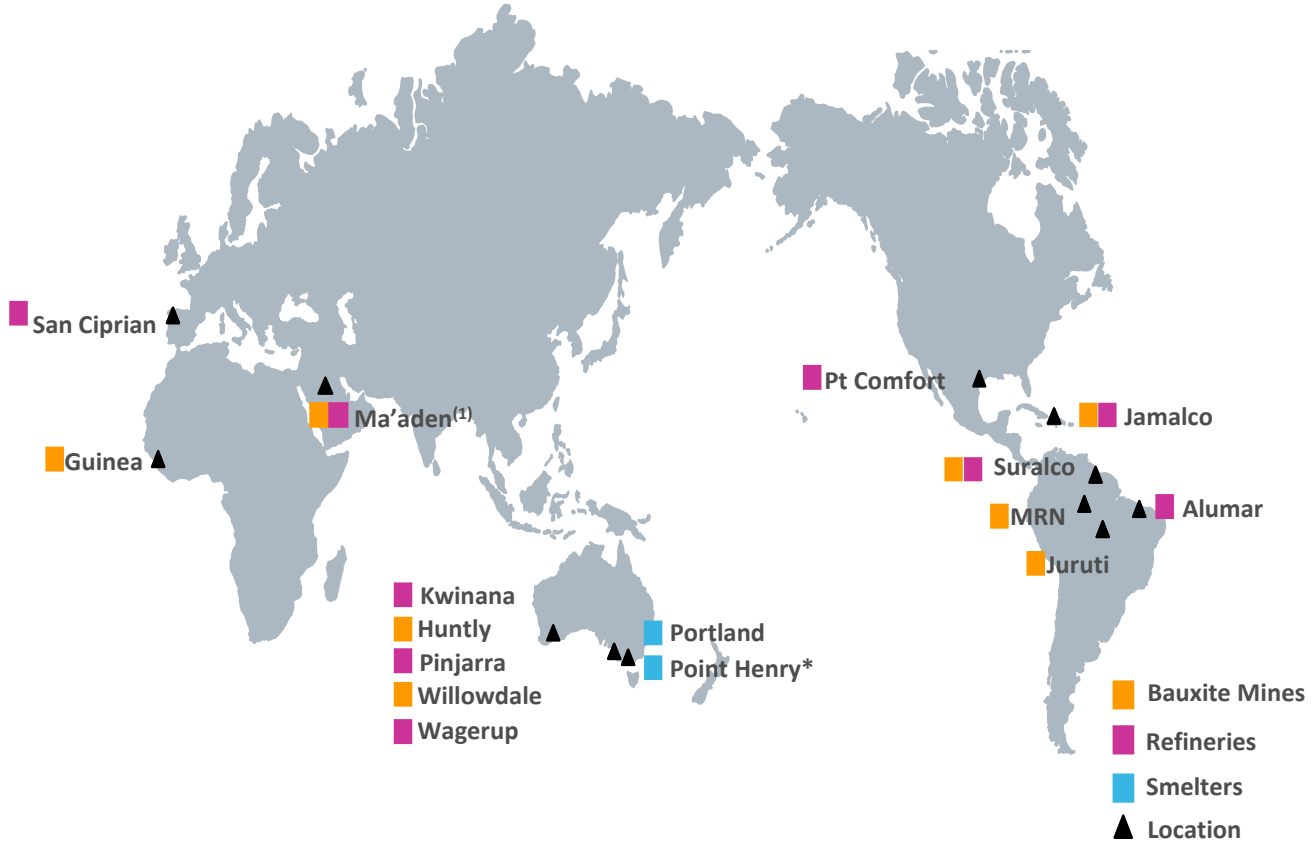
This presentation is not a prospectus or an offer of securities for subscription or sale in any jurisdiction.

Some statements in this presentation are forward-looking statements within the meaning of the US Private Securities Litigation Reform Act of 1995. Forward-looking statements also include those containing such words as "anticipate", "estimates", "should", "will", "expects", plans" or similar expressions. Forward-looking statements involve risks and uncertainties that may cause actual outcomes to be different from the forward-looking statements. Important factors that could cause actual results to differ from the forward-looking statements include: (a) material adverse changes in global economic, alumina or aluminium industry conditions and the markets served by AWAC; (b) changes in production and development costs and production levels or to sales agreements; (c) changes in laws or regulations or policies; (d) changes in alumina and aluminium prices and currency exchange rates; (e) constraints on the availability of bauxite; and (f) the risk factors and other factors summarised in Alumina's Form 20-F for the year ended 31 December 2013.

Forward-looking statements that reference past trends or activities should not be taken as a representation that such trends or activities will necessarily continue in the future. Alumina Limited does not undertake any obligations to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. You should not place undue reliance on forward-looking statements which speak only as of the date of the relevant document.

AWAC JV – world's largest bauxite and alumina producer

- Alcoa Inc. 60% (and manager), Alumina Limited 40% ownership
- 8 bauxite mines and 8 refineries, producing 15.8 million tonnes of alumina in 2013
- 2 smelters – JV produced 354,000 tonnes of aluminium in 2013 (*Point Henry to shut later this year)
- Mine and refinery (1.8 million tonne) under construction in Saudi Arabia – JV with Ma'aden (AWAC 25.1%)



(1) *Greenfield project that is expected to begin production in the fourth quarter of 2014*

Current impact of Indonesian bauxite ban

- Pre-ban huge bauxite stockpiles built up in China
  - led to reduced short term requirements into China
- Wider range of bauxite sources being trialled
  - differing sources, qualities and freight costs
- Complete stop in bauxite exports from Indonesia*
  - no bauxite export licences issued by Indonesia
- Some Chinese refiners getting nervous:
  - stockpiles running down (5-14 months left)
  - no obvious imminent, large-scale, low cost replacement
  - many Chinese-Indonesian refinery projects proposed
  - Jamaican Government announced a JV with Chiping Xinfa for a greenfields refinery
  - some Chinese merchant refinery curtailments (e.g. Xinfa 1.2 million tonnes)
- But China and RoW alumina surplus, so no significant cost or availability impact so far

* Beyond supplies in progress at time of ban

China imported bauxite stockpiles - reducing

ALUMINA LIMITED

Inventories falling as stocks drawn down

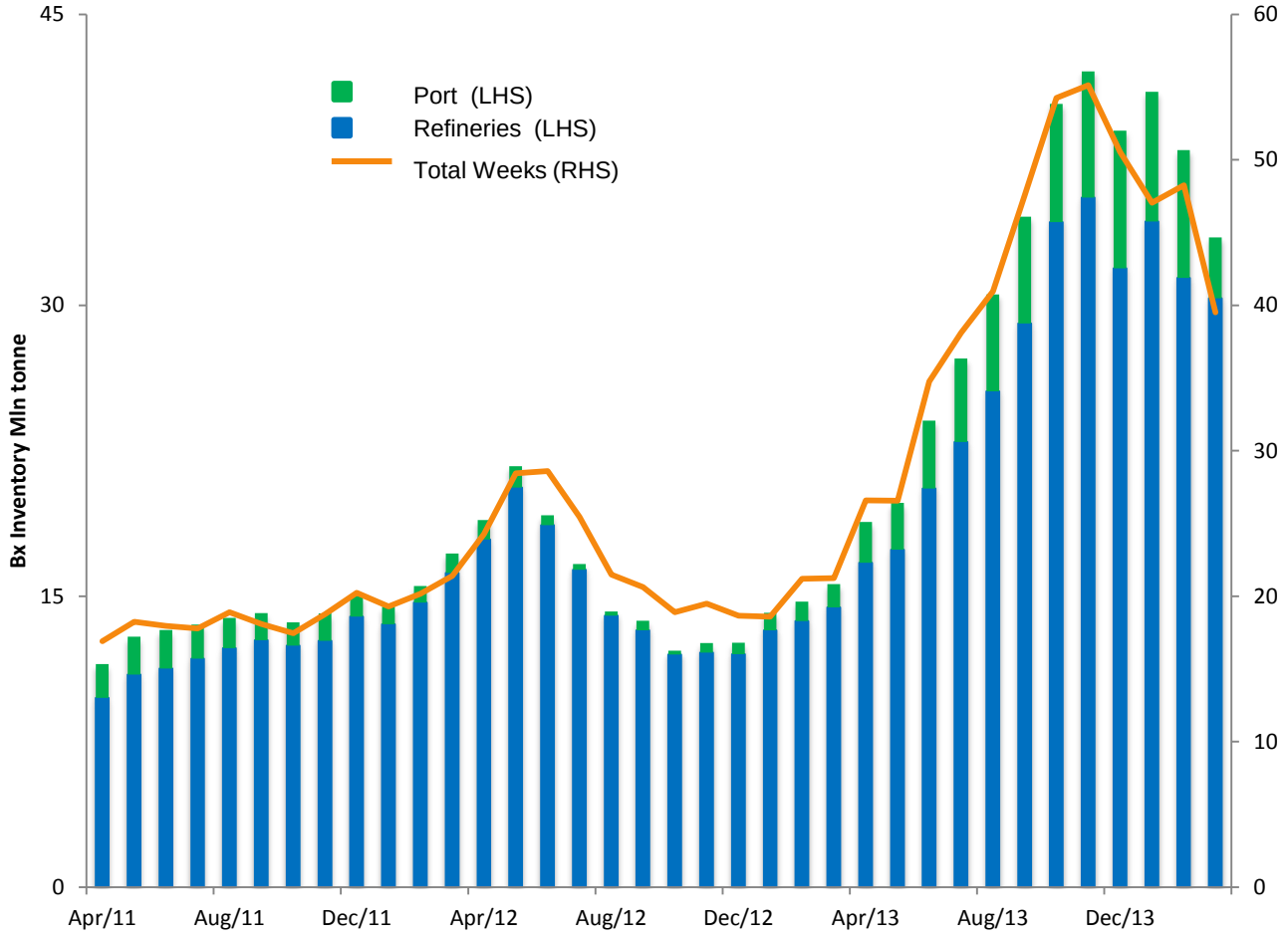
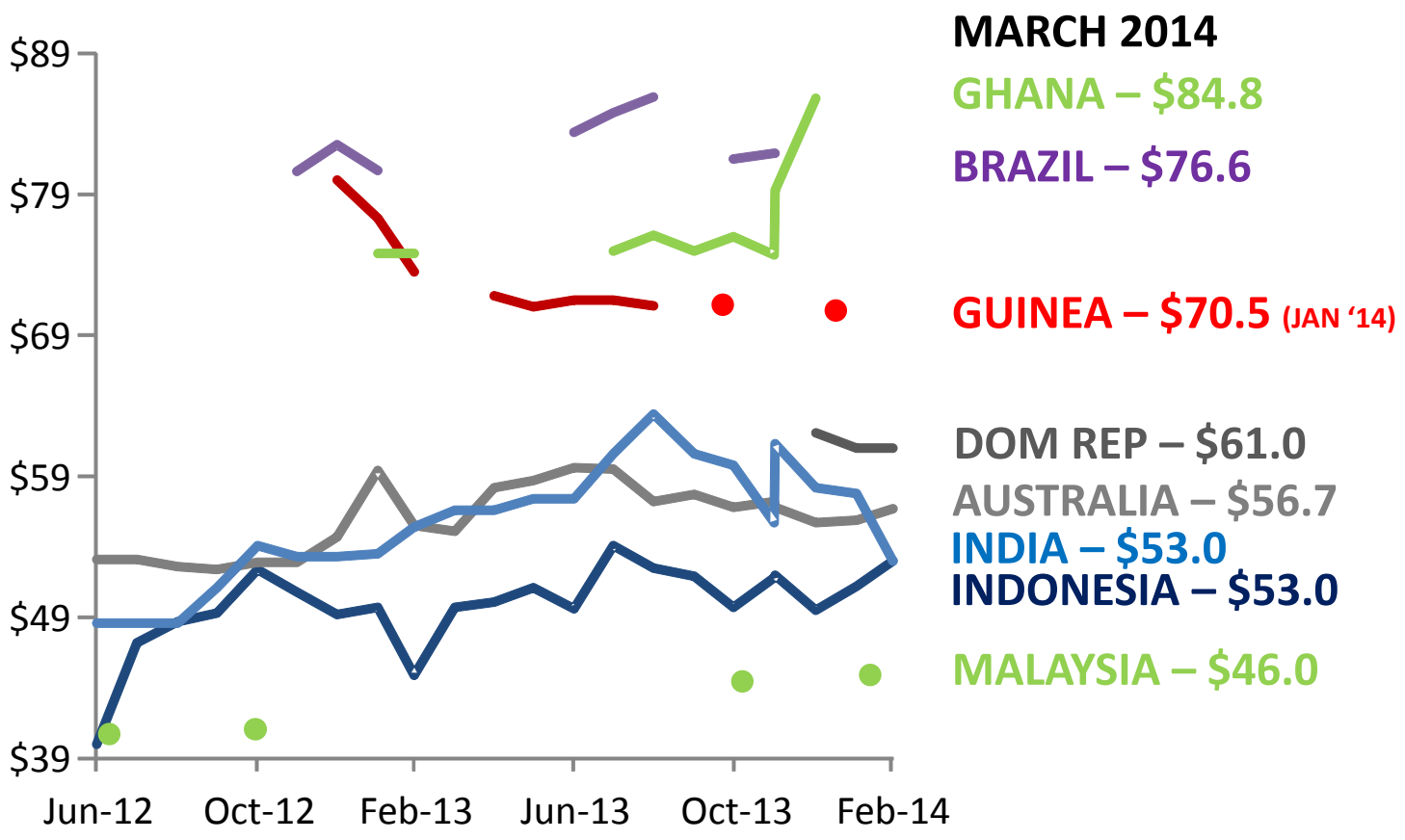


Chart: China imported bauxite inventory, CM Group, April 2014

Chinese imported bauxite – Atlantic sources at much higher prices

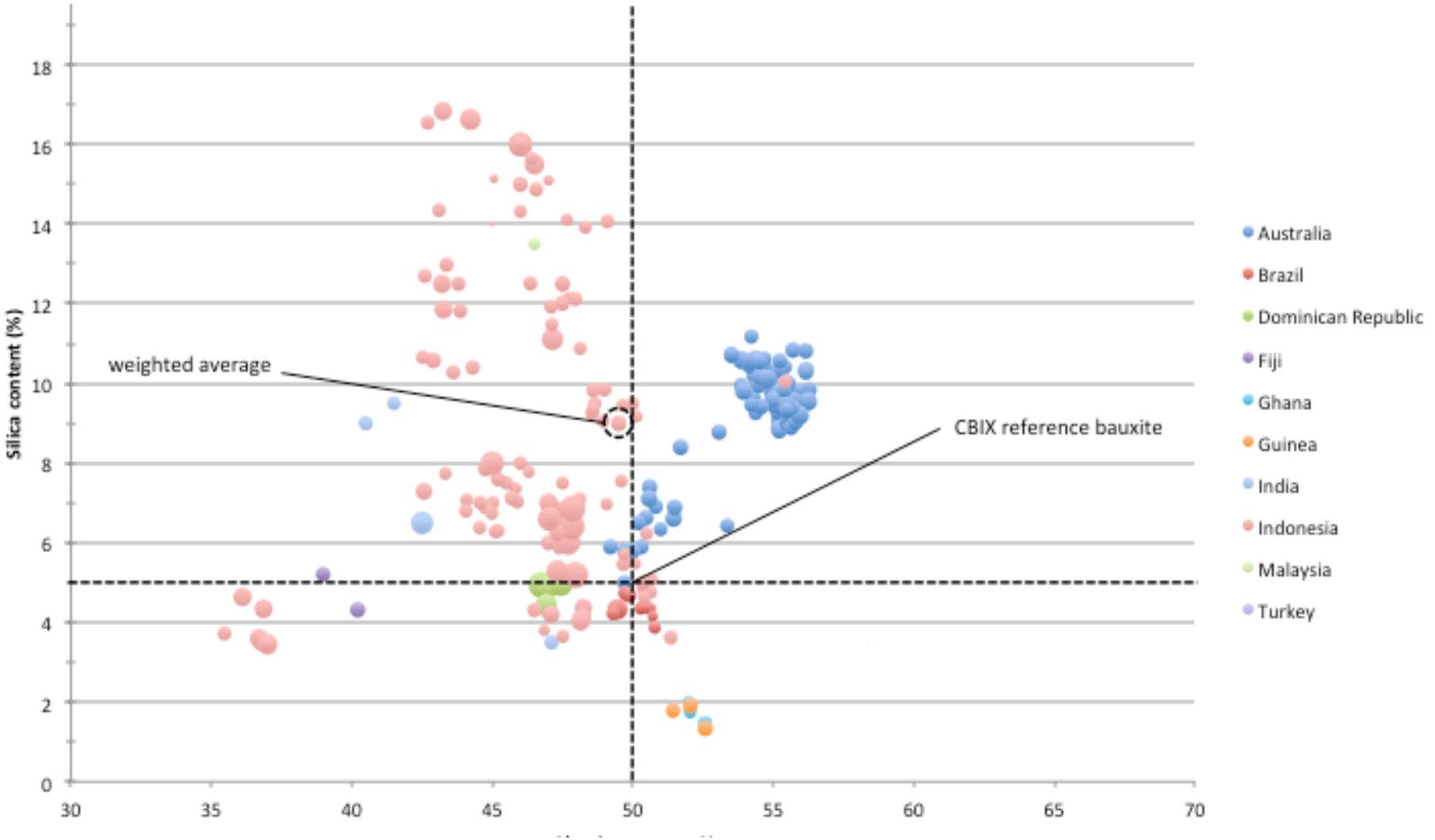
ALUMINA LIMITED

Landed prices of imported bauxite



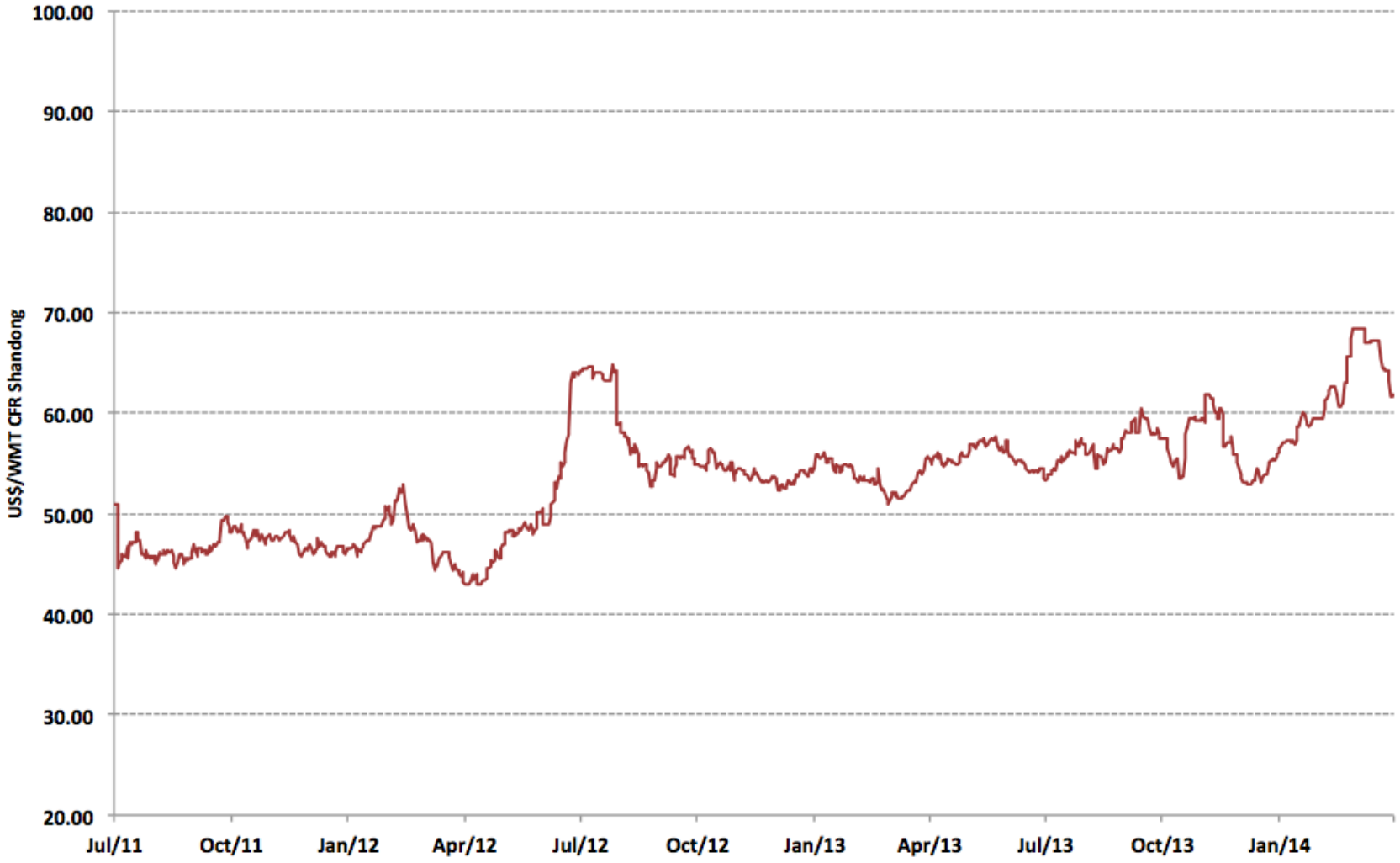
Chinese Imported Bauxite Prices CIF, HARBOR Aluminium with China Customs Data, March 2014

Wide quality divergence in imported bauxite, by origin (total % silica and alumina content)



Source: CM Group, China Customs, (October 2013 – March 2014)

Chinese imported value-in-use index (CBIX) – gradual increase

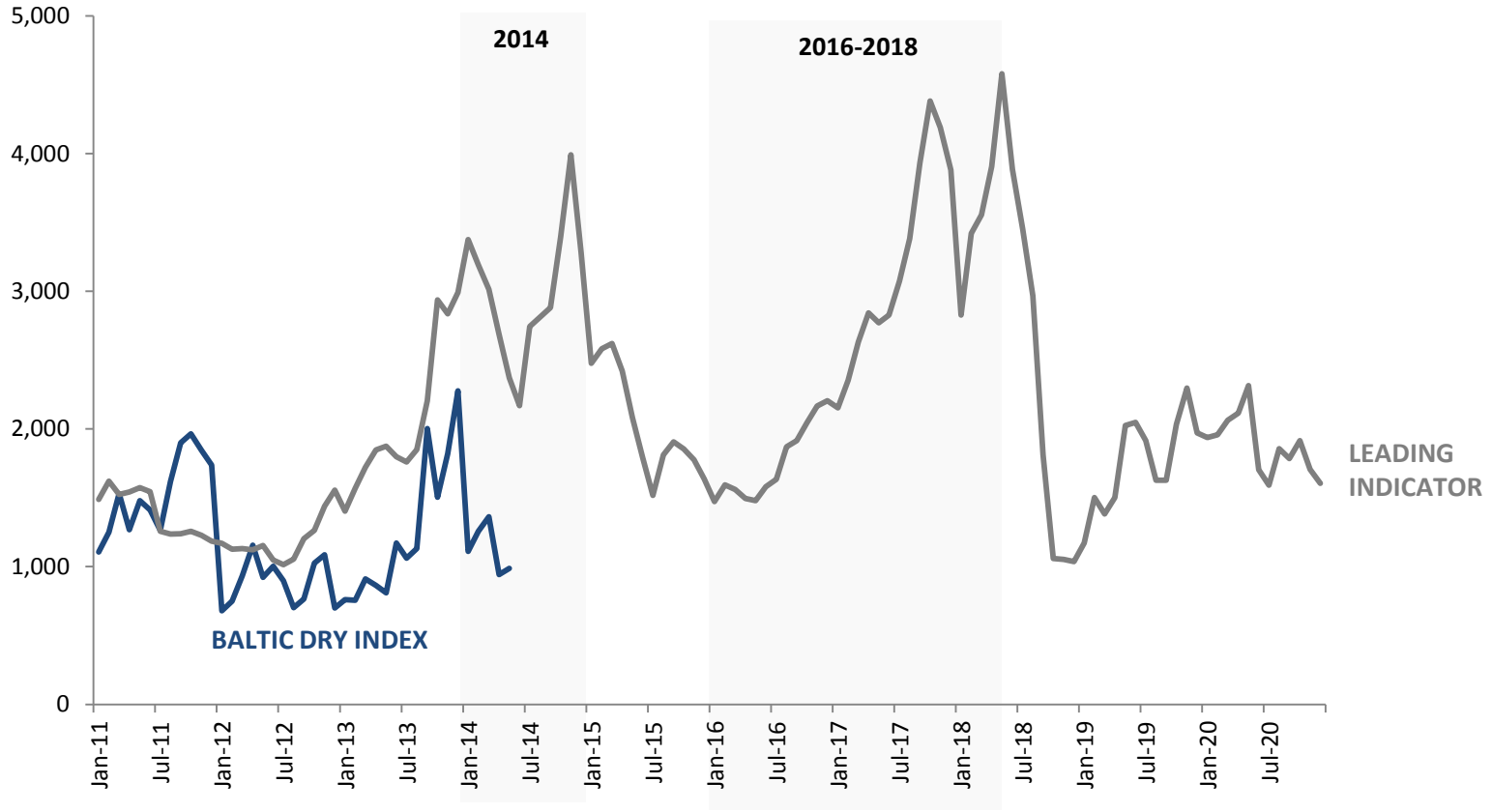


Source: CM Group, CBIX, May 2014

Has freight market bottomed out? Bauxite importers could suffer higher costs later this year and 2016-2018

ALUMINA LIMITED

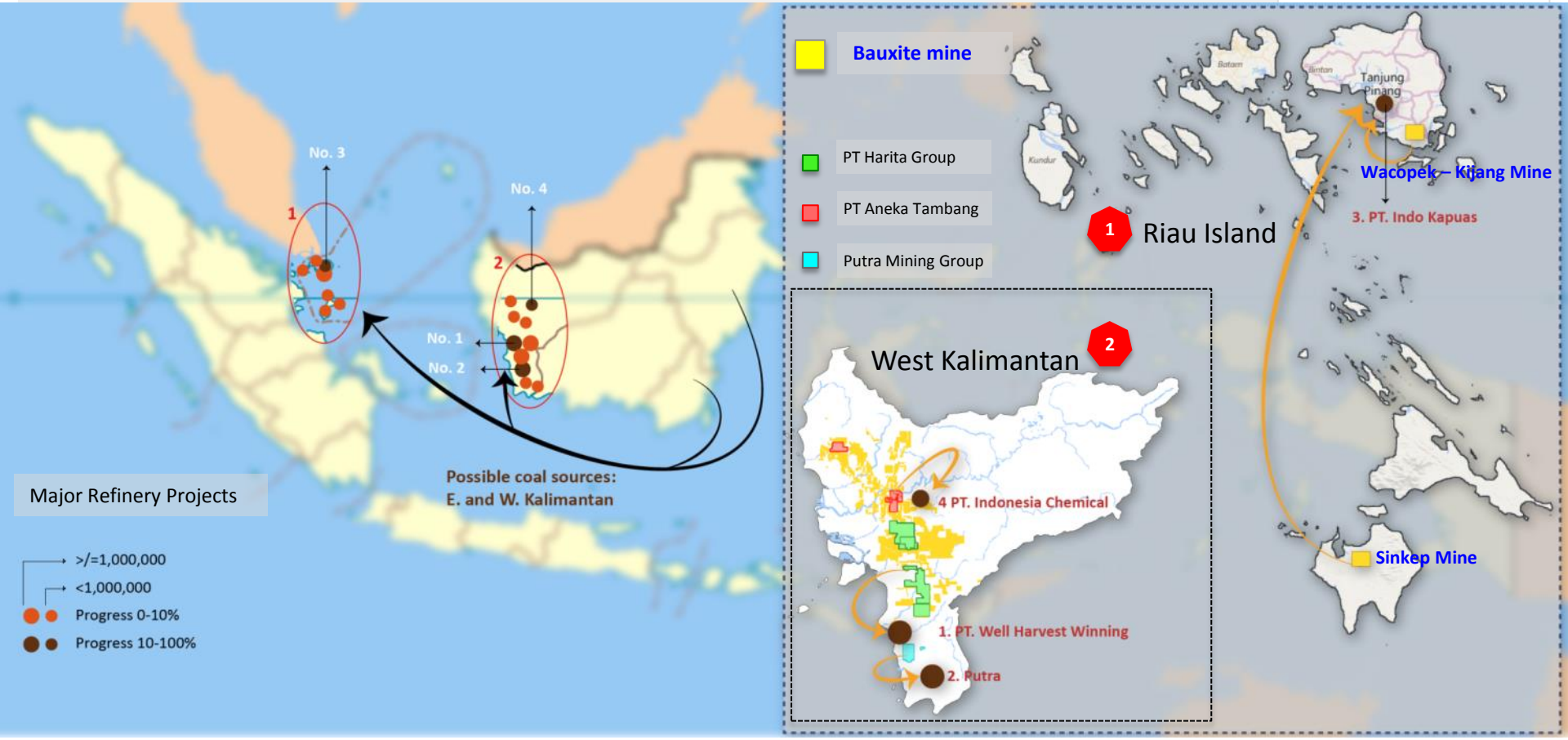
Baltic Dry Index and Leading Indicator
(units)



Source: HARBOR Aluminium, May 2014

Indonesian alumina projects (planned and under construction)

Source: ESDM, CM Group



Project No.	Company	Capacity	Investment (USD)	Address	Possible Coal Sources	Progress
1	PT. Cita Mineral Investindo Tbk(25%); China Hongqiao Group(60%), Winning Investment Company (10%) PT. Danpac Resources Kalbar (5%).	Phase I: 1 MTPY (2015) Phase II: 1MTPY (2017)	Phase I: 1 bln Total: 2.25bln	Ketapang, W. Kalimantan	S. & E. Kalimantan	10%
2	PT. Kendawangan Putra Lestari PT. Putra Alam Lestari PT. Dutam Mineral	1.8MTPY	1.2 bln	W. Kalimantan	S. &E. Kalimantan	10%
3	PT. Indo Kapuas Alumina	0.1MTPY	0.25bln	Bintan Island	S. Kalimantan	21%
4	Antam (80%); Showa Denko K.K.(20%)	0.3 MTPY	0.49 bln	Tayan, W. Kalimantan	S. & E. Kalimantan	97%

Note: Refer to the next slide for the full list of the refinery projects.

Indonesian alumina projects – how many are contingent on a bauxite export quid pro quo?

Project No.	Company Involved	Project No.	Company Involved	Project No.	Company Involved
1	PT. Harita Prima Abadi Mineral	6	PT. Persada Pratama Cemerlang	12	DINAMIKA SEJAHTERA MANDIRI, PT
	PT. Karya Utama Tambangjaya		PT. Persada Buana Gemilang	13	Impian Cipta Bintan Sukses, PT
2	Kendawangan Putra Lestari	7	PT. Telaga Bintan jaya	14	PT. Alakasa Industrindo
	Putra Alam Lestari		PT. Citra Mentaya Mandiri	15	Tanjung Air Berani
	Dutam Mineral		PT. Parenggean Makmur Sejahtera	16	Jinjiang - PT. Tamindo Mutiara Perkasa
3	Indo Kapuas Alumina		DUTA BORNEO PRATAMA, PT		Jinjiang - PT. Meliau Ratu Abadi
4	PT. Indonesia Chemical Alumina		SYLVA SARI, PT		Jinjiang - PT. Tayan Alumina Abadi
5	PT. Kapuas Bara Mineral	8	PT. Kereta Kencana Bangun Perkasa		Jinjiang - PT. Fortuna Jaya Makmur
	PT. Mahkota Karya Utama	9	Hermina Jaya		Jinjiang - PT. Kindai Mandiri Sejahtera
	PT. Fajar Mentaya Abadi	10	Bukit Merah Indah		Jinjiang - PT. Agra Budi Gasutama
	PT. Bintan Alumina Indonesia		Mekko Metal Mining		Jinjiang - PT. Agra Budi Gasutama
	Bumi Indah Mulia (IUP OPK A/J)	11	PT. Kalmin		
	PT. Sanmas Mekar Abadi		PT. Alu Sentosa		
	Gunung Sion, PT		NUSAPATI NUSANTARA, PT		

Note:

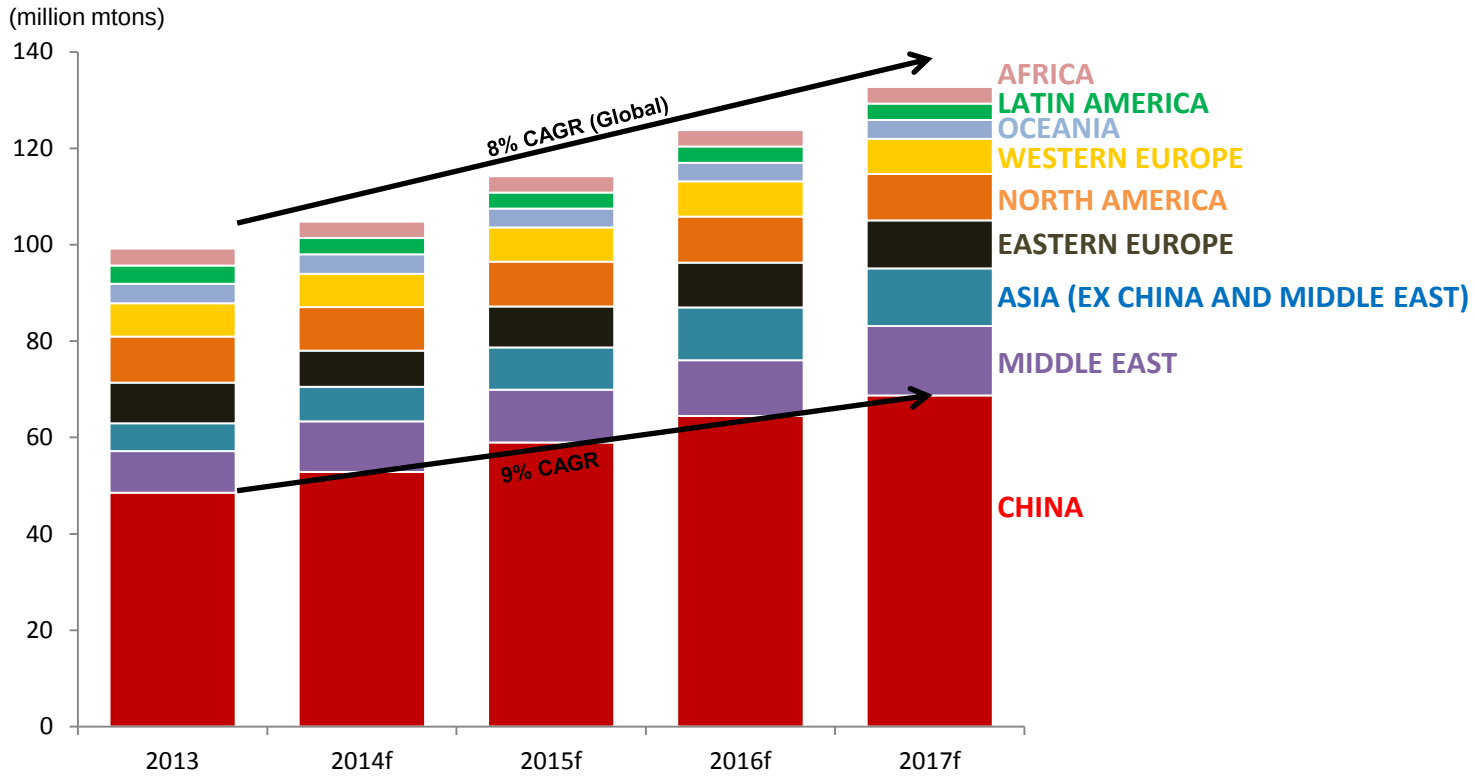
Project Numbers 1 - 4 are between 10%-97% complete, as illustrated in the previous slide

The estimated cost of a Chinese style modular refinery, built largely in China and installed in Indonesia, is approximately $1,200/t, plus costs of coal and bauxite mines and associated infrastructure such as roads and a port

Source: ESDM, CM Group

On-going strong alumina demand growth (mainly China, Middle East and India)

Global Metallurgical Alumina Demand Forecast



Growth requires additional ~80m tonnes per annum of bauxite by 2017[(1)]

Chart: Harbor Aluminium, April 2014

(1) Alumina Limited estimate based on average 2.5 tonnes of bauxite per tonne of alumina

Planned alumina capacity outside China needs bauxite too - risk of further delays

ALUMINA LIMITED

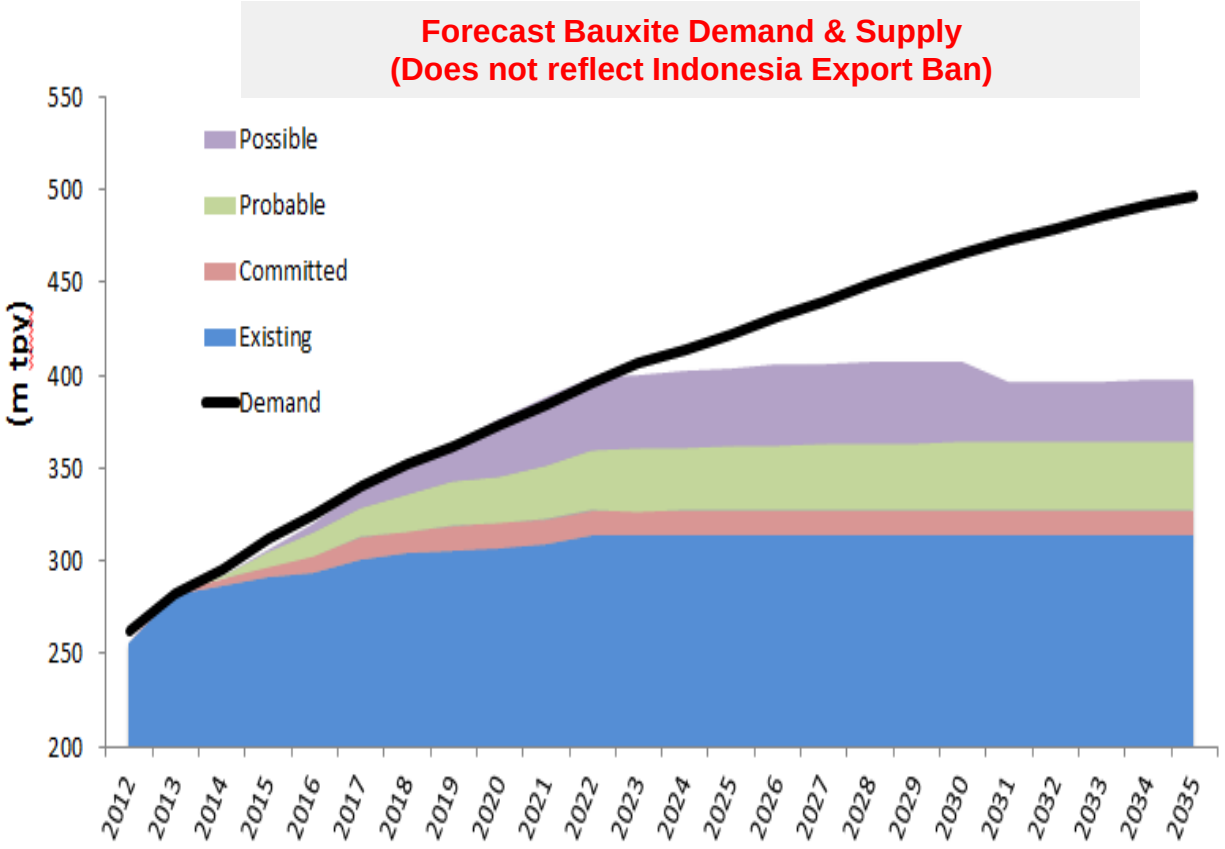
Alumina output expansions planned outside China 2014-2018

REGION	COUNTRY	COMPANY	LOCATION	2014	2015	2016	2017	2018	TYPE	Comments
Latin America	Brazil	Norsk Hydro	Alumina do Para					1,860	Greenfield	The 1.86mt project has been shelved by the company amid "market conditions". Commissioning year high likely to be beyond 2016.
	Brazil	Votorantim Group	Alumina Rondon				3,000		Greenfield	Passed the first stage of the environmental licensing process. Expected by the company to start operations in 2017
Middle East	Saudi Arabia	Alcoa-Ma'aden	Ras Al Khair	1,500	300				Greenfield	Commissioning on track for Q4 2014
	UAE	Emirates Global Aluminum	KIZAD, Al Taweelah				2,000		Greenfield	
Asia ex. China	India	Nalco	Damanjodi			1,000			Brownfield	Approval for mining lease received from Government of Odisha. DPR under preparation
		Hindalco - Aditya	Orissa		1,500				Greenfield	
		Anrak	Anrak Alumina		1,500				Greenfield	Commisioning has been delayed several times. Expected to start production until 2015
		Vedanta	Lanjigarh					2,035	Brownfield	The expansion is on hold due to inability to secure long term bauxite supply.
	Vietnam	Vinacomin	Nhan Co	650					Greenfield	Likely to experience delays
		Vinacomin	Lam Dong						Greenfield	Production started last year, after various delays. Already exporting to China
	Indonesia	PT Antam	Mempawah, West Kalimantan			1,200			Greenfield	The project is on feasibility study. The company is still looking for JV partners. Estimated to start commercial operation in 2016. Possible delays
		Hongqiao Well Harvest Winning Alumina	Ketapang, West Kalimatan		1,000		1,000		Greenfield	First 1mt phase scheduled to start in 2015 . Second 1mt phase scheduled for 2017

Table: Harbor Aluminum, May 2014. Numbers are thousands of tonnes

World bauxite supply and demand - known and unknown mines needed to bridge gap

Potential supply shortfall emerging from 2015



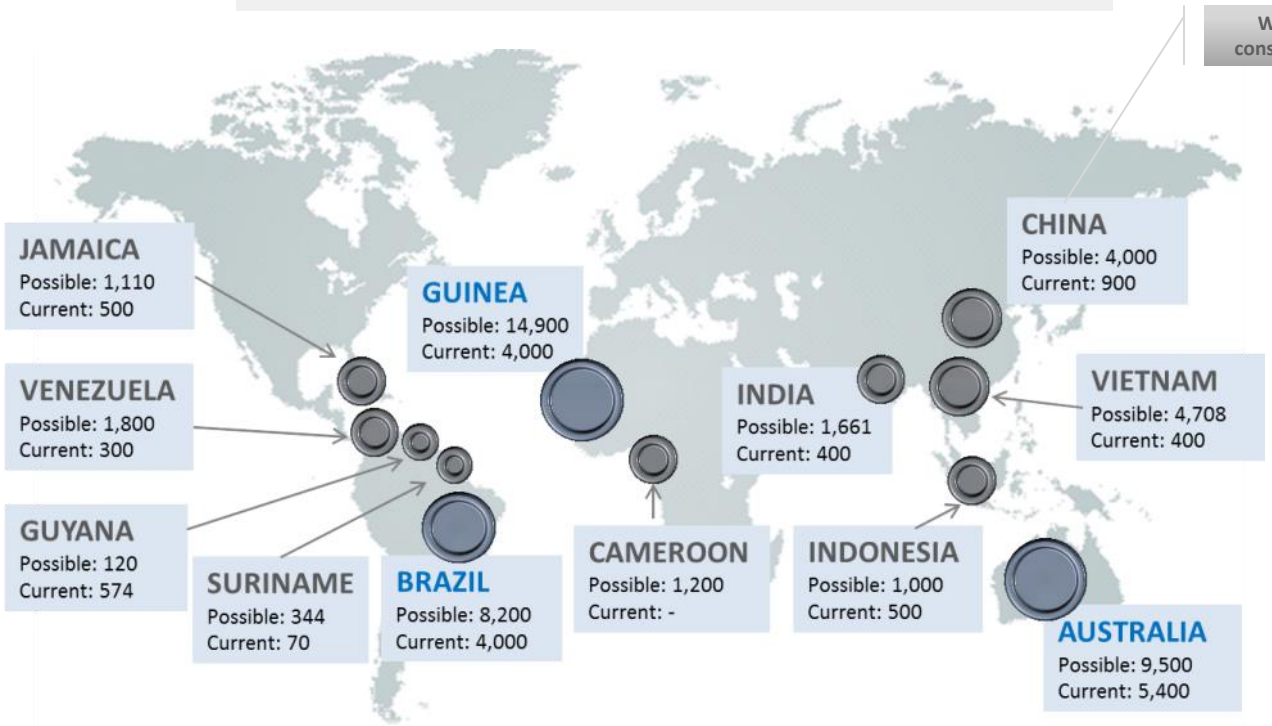
- Bauxite is globally plentiful, but of differing quality and development and financing is becoming slower/harder with issues of:
  - Government approvals
  - Environmental and landowner issues
  - Capital costs and available infrastructure
  - Nationalistic policies & taxes

Source: Bauxite demand and supply, 2012 to 2035, CRU's Bauxite Long Term Market Outlook, 2013 edition

Global bauxite economic reserves – many hurdles to new mines

Significant deposits exist but uncertainty if sufficient new supply will be developed

Bauxite Reserves – Selected Countries (million tonnes)



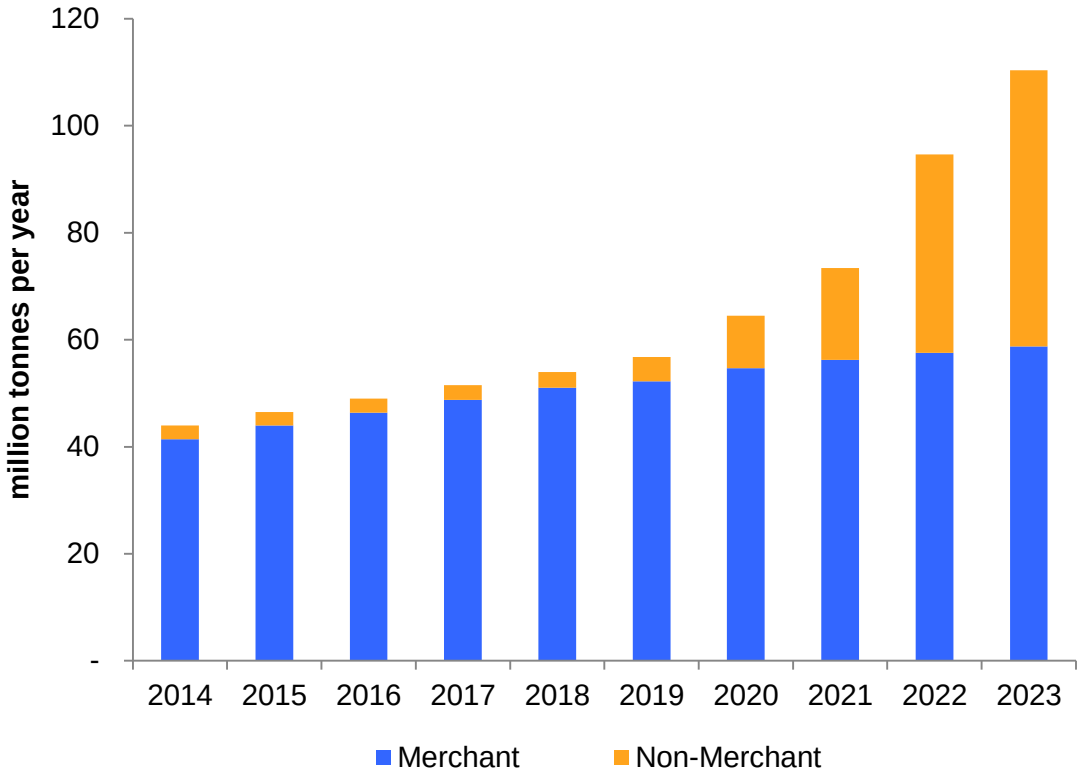
Supply growth likely to be limited by

- Expected investment returns
- Available infrastructure or its cost
- Government approvals
- Community challenges
- Competing uses of land
- Changing mining codes & taxes

Chart: HARBOR Intelligence, May 2014

Chinese bauxite import volumes forecast to grow more sharply from around 2019

Forecast Chinese Bauxite Imports by Destination Province - 2014 to 2023 (mln t/yr)

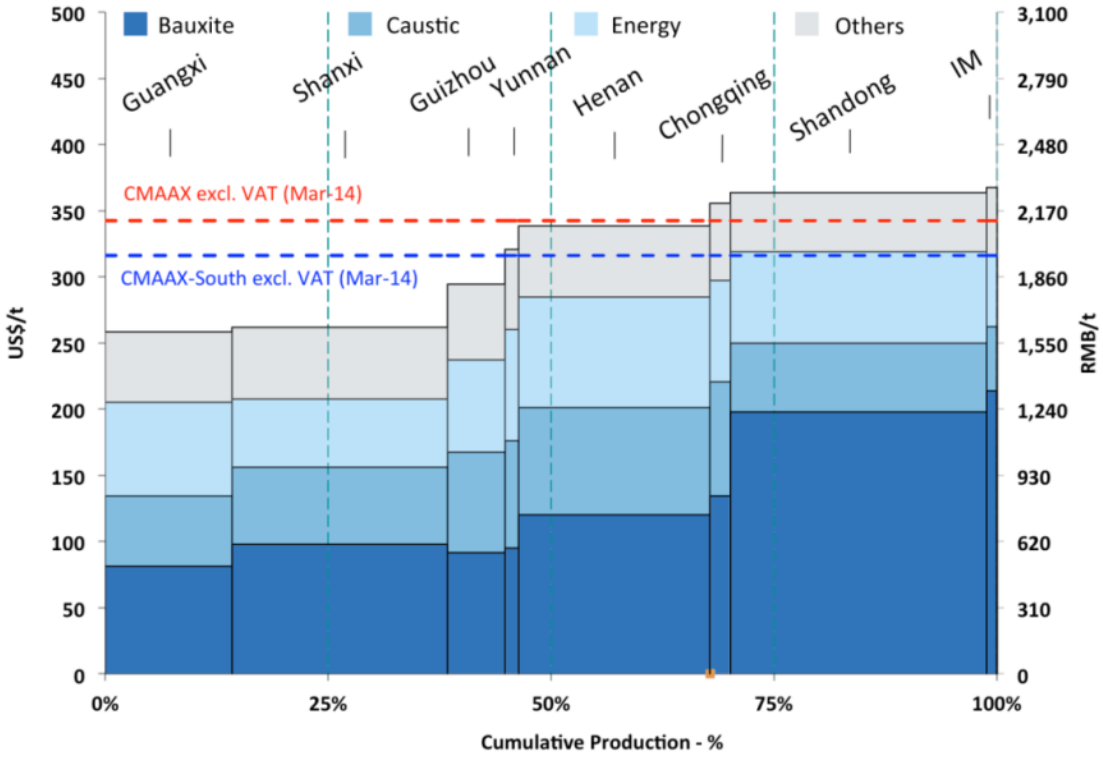


- Shandong to remain the major merchant bauxite-consuming province over the period to 2023
- Under-utilised logistics allow Inner Mongolia (rail) and Chongqing (barge) to become new entrants
- Henan and Shanxi refineries likely to import significant bauxite tonnes (due to local allocation and quality issues)

Chart: CM Group, January 2014

World marginal cost producers in Shandong – Henan and Shanxi may move up cost curve

China Alumina Cash Cost Curve by Province



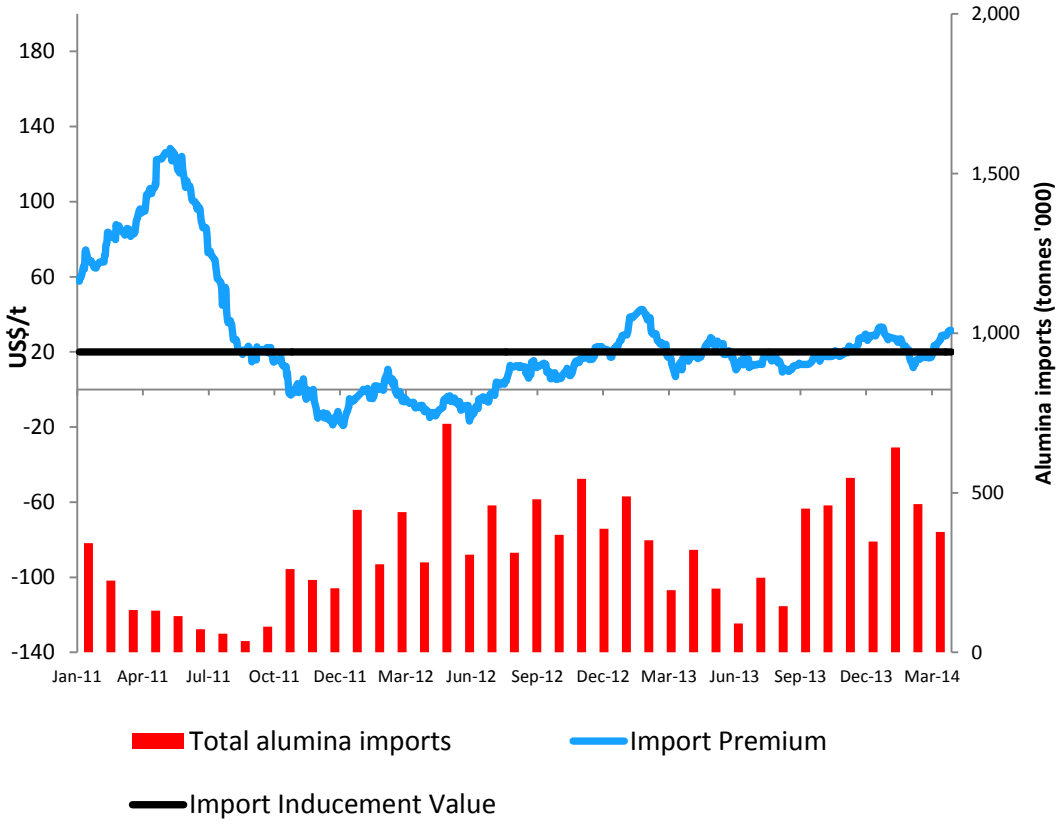
- Marginal producers dependent on bauxite imports
- Henan and Shanxi costs could increase, as grades deplete and allocations restrict bauxite movements from around 2019

Shandong is global marginal producer, with approx 20 m tonnes of capacity

Chart: China refinery cash cost curve by province, excluding VAT, CM Group, April 2014

Higher bauxite costs in China leading to higher domestic alumina price may pull RoW alumina price higher

Chinese vs Aust Alumina Prices (CMAAX less Aust FOB adjusted) (US$/t) and Import Volumes (thousand tonnes/month)

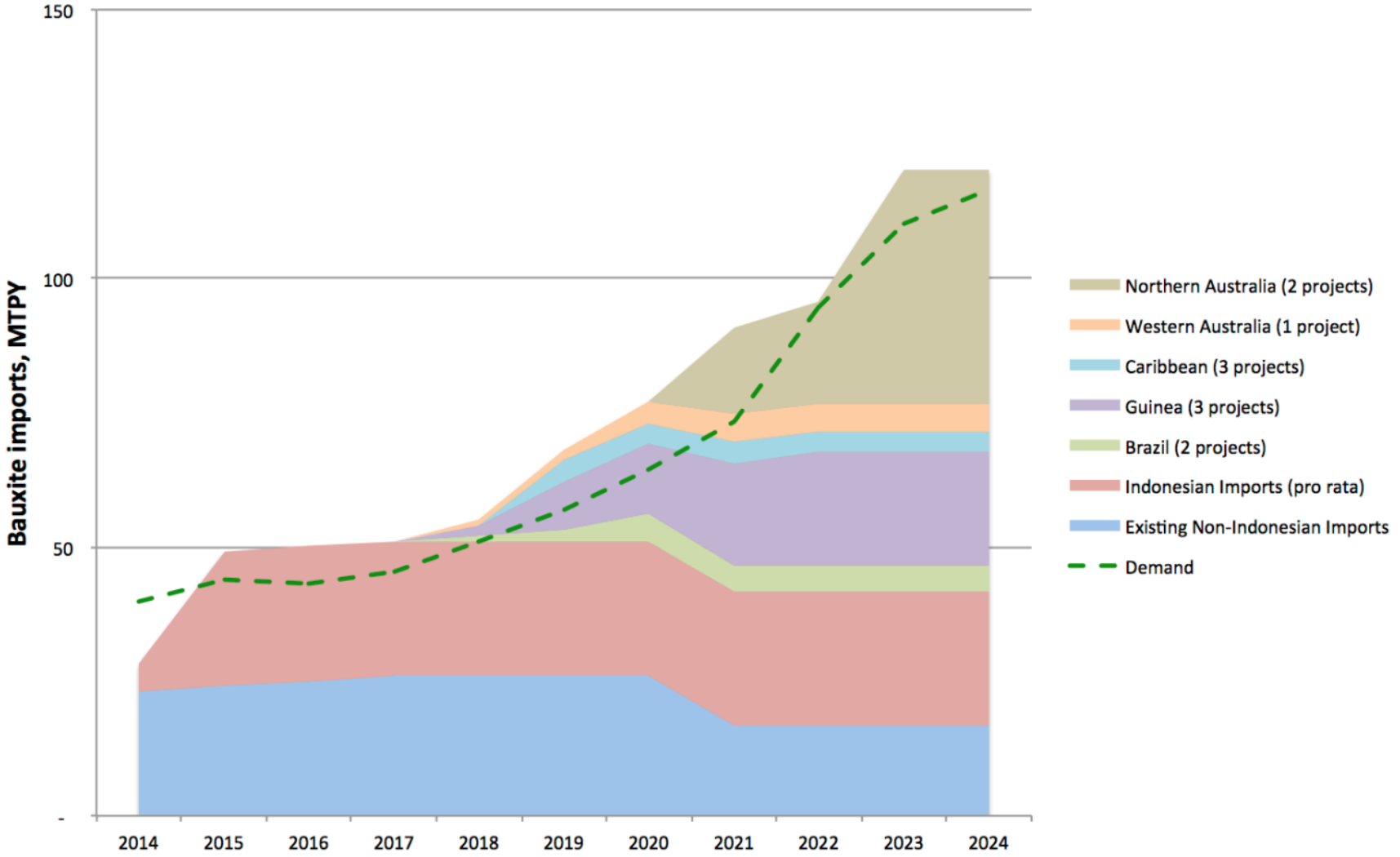


- China and RoW two distinct alumina markets lined by Chinese imports
- Import prices tracking $20/t “import inducement premium” in 2013, resulting in lower imports
- Any future bauxite shortages in China may induce more alumina imports
- Higher bauxite costs are likely to increase Chinese alumina prices

RoW price should reflect China’s demand growth and bauxite challenges

Chart: China imports of alumina and CMAAX vs Aust FOB adjusted, CM Group, April 2014

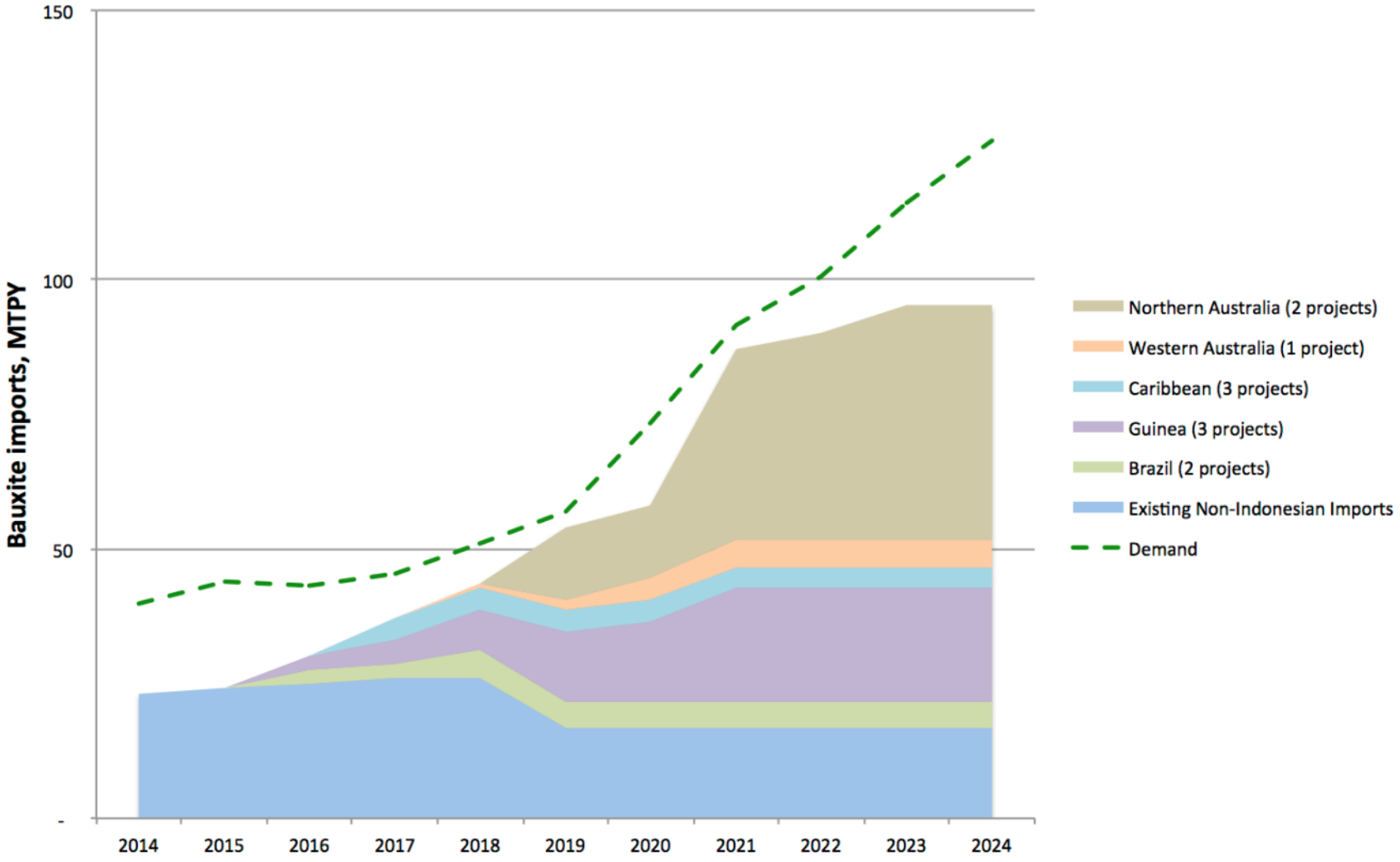
Forecast Chinese bauxite imports* to 2024 (assuming Indonesian export ban is lifted)



* Assuming Indonesian mineral export ban removed and pro rata exports according to alumina refining projects

Source: CM Group, China Customs, May 2014

Forecast Chinese bauxite imports* to 2024 (if ban stays): post-stockpile risk of 15 million tonne gap



* Assumes Indonesian mineral export ban remains in place over the 10 year period

Source: CM Group, China Customs, May 2014

Future impact of Indonesian bauxite ban

- We assume the ban will continue into 2015
- If so, from the second half of 2015:
  - potential 15 million tonne bauxite import gap when stockpiles run out
  - Chinese may accelerate domestic bauxite usage, bringing forward 2019 gap; or
  - Chinese alumina production could drop by up to 6 million tonnes (annualised)
- This is likely to mean:
  - more alumina imports into China; or
  - drawdown of Chinese aluminium stocks or imports of more metal
  - higher bauxite and alumina prices
- At some stage, it is possible that in Indonesia:
  - refineries will start to be built, e.g. with permitted pro rata bauxite export and performance bonds (eventually up to say 20-25 million bauxite tonnes) and/or
  - bauxite exports will be taxed at a much higher rate than 20%
- From 2019 on, large increase in demand and new, more distant mines likely to cause landed bauxite price in China to move up from say $60/t to $80/t (increasing marginal cost of alumina production by around $40-50/t)