

ALUMINUM CORP OF CHINA LTD  
Form 20-F  
April 01, 2014

As filed with Securities and Exchange Commission on April 1, 2014

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UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

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FORM 20-F

REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR (g) OF  
THE SECURITIES EXCHANGE ACT OF 1934

OR

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF  
1934

For the fiscal year ended December 31, 2013

OR

TRANSITION REPORT PURSUANT TO SECTION 13 or 15(d) OF  
THE SECURITIES EXCHANGE ACT OF 1934

OR

SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF  
THE SECURITIES EXCHANGE ACT OF 1934

Commission file number 001-15264

(Exact name of Registrant as specified in its charter)

**ALUMINUM CORPORATION OF CHINA LIMITED**

(Translation of Registrant's name into English)

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People's Republic of China

(Jurisdiction of incorporation or organization)

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No. 62 North Xizhimen Street, Haidian District, Beijing  
People's Republic of China (100082)

(Address of principal executive offices)

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Xiong Weiping

No. 62 North Xizhimen Street, Haidian District, Beijing  
People's Republic of China (100082)

(86) 10 8229 8560

(Name, Telephone, E-mail and/or Facsimile number and Address of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act.

Title of each class	Name of each exchange on which registered
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American Depositary Shares* Class H Ordinary Shares**	New York Stock Exchange, Inc.
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\* Evidenced by American Depositary Receipts. Each American Depositary Share represents 25 H Shares.

\*\* Not for trading, but only in connection with the listing of American Depositary Shares, pursuant to the requirements of the Securities and Exchange Commission

Securities registered or to be registered pursuant to Section 12(g) of the Act.

None

(Title of Class)

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act.

None

(Title of Class)

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of December 31, 2013:

Domestic Shares, par value RMB1.00 per shar	9,580,521,924
H Shares, par value RMB1.00 per share	3,943,965,968

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes  No

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.

Yes  No

Note-Checking the box above will not relieve any registrant required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 from their obligations under those Sections.

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes  No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).

Yes  No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of "accelerated filer and large accelerated filer" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer  Accelerated filer  Non-accelerated filer

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP  International Financial Reporting Standards as issued by the International Accounting Standards Board  Other

If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow.

Item 17  Item 18

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes  No

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## FORWARD-LOOKING STATEMENTS

Certain information contained in this annual report, which does not relate to historical financial information, may be deemed to constitute forward-looking statements. The words or phrases "will likely result", "are expected to", "will continue", "is anticipated", "estimate", "project", "believe" or similar expressions are intended to identify "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Such statements are subject to certain risks and uncertainties that could cause actual results to differ materially from historical results and those presently anticipated or projected. You should not place undue reliance on any such forward-looking statements, which speak only as of the date made. These forward-looking statements include, without limitation, statements relating to:

- \* future general economic conditions;
- \* future conditions in the international and China capital markets;
- \* future conditions in the financial and credit markets;
- \* future prices and demand for our products;
- \* future PRC tariff levels for alumina and primary aluminum;
- \* sales of our products;
- \* the extent and nature of, and potential for, future development;
- \* production, consumption and demand forecasts of bauxite, coal, alumina and primary aluminum;
- \* expansion, consolidation or other trends in the primary aluminum industry;

- \* the effectiveness of our cost-saving measures;
- \* future expansion, investment and acquisition plans and capital expenditures;
- \* competition;
- \* changes in legislation, regulations and policies;
- \* estimates of proven and probable bauxite reserves;
- \* our research and development plans; and
- \* our dividend policy.

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### CERTAIN TERMS AND CONVENTIONS

These statements are based on assumptions and analyses made by us in light of our experience and our perception of historical trends, current conditions and future developments, as well as other factors we believe are appropriate in particular circumstances. However, whether actual results and developments will meet our expectations and predictions depends on a number of risks and uncertainties, which could cause actual results to differ materially from our expectations. These risks are more fully described in the section headed "Item 3. Key Information - D. Risk Factors."

Consequently, all of the forward-looking statements made in this annual report are qualified by these cautionary statements. We cannot assure you that the actual results or developments anticipated by us will be realized or, even if substantially realized, that they will have the expected effect on us or our business or operations.

"**Chalco**", "**the Company**", "**the Group**", "**our company**", "**we**", "**our**" and "**us**" refer to Aluminum Corporation of China Limited and its subsidiaries and, where appropriate, to its predecessors; "**A Shares**" and "**domestic shares**" refer to our domestic ordinary shares, with a par value of RMB1.00 each, which are listed on the Shanghai Stock Exchange;

"**alumina-to-silica ratio**" refers to the ratio of alumina to silica in bauxite by weight;

"**aluminum fabrication**" refers to the process of converting primary aluminum or recycled aluminum materials into plates, strips, bars, tubes and other fabricated products;

"**AUD**" or "**Australian dollars**" refers to the lawful currency of the Commonwealth of Australia;

"**Baotou Aluminum**" refers to Baotou Aluminum Company Limited, our wholly-owned subsidiary established under the PRC law;

"**Baotou Group**" refers to Baotou Aluminum (Group) Co., Ltd., one of our shareholders;

"**bauxite**" refers to a mineral ore that is principally composed of aluminum;

"**Bayer process**" refers to a refining process that employs a strong solution of caustic soda at an elevated temperature to extract alumina from ground bauxite;

"**Board**" refers to our board of directors;

"**CBEX**" refers to China Beijing Equity Exchange, an approved equity exchange for the transfer of State-owned assets;

"**Chalco Energy**" refers to Chalco Energy Co., Ltd., our wholly-owned subsidiary established under the PRC law;

"**Chalco Hong Kong**" refers to Chalco Hong Kong Limited, our wholly-owned subsidiary established under Hong Kong Law;

"**Chalco Iron Ore**" refers to Chalco Iron Ore Holding Limited, our subsidiary until December 2013 when we disposed of 65% of its equity interest to Chinalco;

"**Chalco Liupanshui**" refer to Chalco Liupanshui Hengtaihe Mining Co., Ltd., 49% of the equity interest of which is owned by us;

"**Chalco Mining**" refers to Chalco Mining Co., Ltd., our wholly-owned subsidiary established under the PRC law;

"**Chalco Nanhai**" refers to Chalco Nanhai Alloy Company, 60% of the equity interest of which is owned by us;

"**Chalco Ruimin**" refers to Chalco Ruimin Company Limited, our subsidiary until June 2013 when we disposed of 93.30% of its equity interest to Chinalco;

"**Chalco Southwest Aluminum**" refers to Chalco Southwest Aluminum Company Limited, our subsidiary until June 2013 when we disposed of 60% of its equity interest to Chinalco;

"**Chalco Southwest Aluminum Cold Rolling**" refers to Chalco Southwest Aluminum Cold Rolling Company Limited, our wholly-owned subsidiary until June 2013 when we disposed of its entire equity interest to Chinalco;

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"**Chalco Trading**" or "**CIT**" refers to China Aluminum International Trading Co., Ltd., our wholly-owned subsidiary established under the PRC law;

"**Chalco Xing Xian**" refers to the construction of Bayer process production system and ancillary facilities at Xing Xian, Lvliang City of Shanxi Province with designed capacity of 800,000 tonnes of metallurgical grade alumina per year;

"**China**" and the "**PRC**" refers to the People's Republic of China, excluding for purposes of this annual report, Hong Kong Special Administrative Region, Macao Special Administrative Region and Taiwan;

"**China Nonferrous Metals Technology**" refers to China Nonferrous Metals Processing Technology Co., Ltd.;

"**Chinalco**" and "**Chinalco Group**" refer to our controlling shareholder, Aluminum Corporation of China and its subsidiaries (other than Chalco and its subsidiaries) and, where appropriate, to its predecessors;

"**Chinalco Finance**" refers Chinalco Finance Co., Ltd.;

"CSRC" refers to China Securities Regulatory Commission;

"C\$" refers to the legal currency of Canada;

"Dongdong Coal" refers to Shaanxi Chengcheng Dongdong Coal Co., Ltd., 45% of the equity interest of which is owned by us;

"Energy-Saving and Emission Reduction Goals" refer to the energy-saving and emission reduction goals set out in China's 12th Five-Year Plan for National Economic and Social Development laid out in 2011, by which China expects to cut its per unit GDP energy consumption by 16 percent compared with the 2010 level by the end of 2015;

"Exchange Act" refers to the U.S. Securities Exchange Act of 1934, as amended;

"Euros" or "EUR" refers to the lawful currency of the Euro zone;

"Fushun Aluminum" refers to Fushun Aluminum Company Limited, our wholly-owned subsidiary established under the PRC law;

"Gansu Hualu" refers to Gansu Hualu Aluminum Company Limited, 51% of the equity interest of which is owned by us;

"Gansu Huayang" refers to Gansu Huayang Mining Development Company Limited, 70% of the equity interest of which is owned by us;

"Guangxi Huayin" refers to Guangxi Huayin Aluminum Company Limited, 33% of the equity interest of which is owned by us;

"Guangxi Investment" refers to Guangxi Investment (Group) Co., Ltd., formerly known as Guangxi Development and Investment Co., Ltd., a PRC state-owned enterprise and one of our promoters and shareholders;

"Guizhou Development" refers to Guizhou Provincial Materials Development and Investment Corporation, a PRC state-owned enterprise and one of our promoters and shareholders;

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"Guizhou Yuneng" refers to Guizhou Yuneng Mining Co., Ltd., 25% of the equity interest of which is owned by us;

"H Shares" refers to overseas listed foreign shares with a par value RMB1.00 each, which are listed on the Hong Kong Stock Exchange;

"Henan Aluminum" refers to Chinalco Henan Aluminum Company Limited, our subsidiary until June 2013 when we disposed of 90.03% of its equity interest to Chinalco;

"HK\$" and "HK dollars" refers to Hong Kong dollars, the lawful currency of the Hong Kong Special Administrative Region of the PRC;

"Hong Kong Stock Exchange" refers to The Stock Exchange of Hong Kong Limited;

"**Hongrui Chemical**" refers to Jiaozuo Hongrui Chemical Company Limited, which we acquired in October 2009 and subsequently ceased its existence as an independent legal person and became part of our Zhongzhou branch;

"**Huatong Charcoal**" refers to Qinghai Aluminum Huatong Charcoal Co., Ltd., a subsidiary of Chinalco;

"**Huaxi Aluminum**" refers to Huaxi Aluminum Company Limited, our subsidiary until June 2013 when we disposed of 56.86% of its equity interest to Chinalco;

"**Bayer-sintering combined process**" and "**Bayer-sintering series process**" refer to the two methods of refining process developed in China which involve the combined application of the Bayer process and the sintering process to extract alumina from bauxite;

"**Japanese Yen**" refers to the lawful currency of Japan;

"**Jiaozuo Wanfang**" refers to Jiaozuo Wanfang Aluminum Manufacturing Co. Ltd., 17.75% of the equity interest of which was owned by us as of December 31, 2013. Jiaozuo Wanfang was our subsidiary from January 1, 2008 when we established de facto control over it to April 19, 2013 when it completed its private placement of A shares;

"**Ka**" refers to kiloamperes, a unit for measuring the strength of an electric current, with one kiloampere equaling to 1,000 amperes;

"**kWh**" refers to kilowatt hours, a unit of electrical power, meaning one kilowatt of power for one hour;

"**Lanzhou Aluminum**" refers to Lanzhou Aluminum Co., Ltd., a wholly-owned subsidiary of us since April 2007 and until July 2007 when it was divided into two wholly-owned entities: Lanzhou branch and Northwest Aluminum;

"**Liancheng branch**" refers to our wholly-owned branch, which was formerly known as Lanzhou Liancheng Longxing Aluminum Company Limited, before we acquired 100% of its equity interest;

"**Listing Rules**" and "**Hong Kong Listing Rules**" refers to the Rules Governing the Listing of Securities on the Hong Kong Stock Exchange, as amended;

"**LME**" refers to the London Metal Exchange Limited;

"**Longmen Aluminum**" refers to Shanxi Longmen Aluminum Co., Ltd., 55% of the equity interest of which is owned by us;

"**Luxin Company**" refers to Jiexiu Luxin Coal Gasification Company Limited;

"**MIIT**" refers to Ministry of Industry and Information Technology of the PRC;

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"**Nanping Aluminum**" refers to Fujian Nanping Aluminum Company Limited;

"**NDRC**" refers to China National Development and Reform Commission;



"**Ningxia Energy**" refers to Chalco Ningxia Energy Group Co., Ltd. (formerly Ningxia Electric Power Group Co., Ltd.) and we acquired 70.82% of its equity interest in January 2013;

"**Northwest Aluminum**" refers to Northwest Aluminum Fabrication Branch, our wholly-owned branch until June 2013 when we disposed of all its assets to a subsidiary of Chinalco;

"**NYSE**" or "**New York Stock Exchange**" refers to the New York Stock Exchange Inc.;

"**ore-dressing Bayer process**" refers to a refining process we developed to increase the alumina-to-silica ratio of bauxite;

"**Pingguo Aluminum**" refers to Pingguo Aluminum Company;

"**Qingdao Light Metal**" refers to Chalco Qingdao Light Metal Company Limited, our wholly-owned subsidiary until June 2013 when we disposed of its entire equity interest to Chinalco;

"**Qinghai Energy**" refers to Qinghai Province Energy Development (Group) Co., Ltd., 21% of the equity interest of which is owned by us;

"**refining**" refers to the chemical process used to produce alumina from bauxite;

"**Research Institute**" refers to Zhengzhou Research Institute, our wholly-owned branch mainly providing research and development services;

"**Rio Tinto**" refers to Rio Tinto plc, a company incorporated in England and Wales, the shares of which are listed on the London Stock Exchange and the New York Stock Exchange;

"**RMB**" or "**Renminbi**" refers to the lawful currency of the PRC;

"**SASAC**" refers to State-owned Assets Supervision and Administration Commission of the State Council of China;

"**SEC**" refers to the U.S. Securities and Exchange Commission;

"**Securities Act**" refers to the U.S. Securities Act of 1933, as amended;

"**Shandong Aluminum**" refers to Shandong Aluminum Industry Co., Limited, a wholly-owned subsidiary of Chinalco;

"**Shandong Huayu**" refers to Shandong Huayu Aluminum and Power Company Limited, 55% of the equity interest of which is owned by us;

"**Shanxi Jiexiu**" refers to Shanxi Jiexiu Xinyugou Coal Industry Co., Ltd., 34% of the equity interest of which is owned by us;

"**Shanxi Huasheng**" refers to Shanxi Huasheng Aluminum Company Limited, 51% of the equity interest of which is owned by us;

"**Shanxi Huaxing**" refers to Shanxi Huaxing Aluminum Co., Ltd., our wholly-owned subsidiary;

"**Shanxi Huaze**" refers to Shanxi Huaze Aluminum and Power Co., Limited, 60% of the equity interest of which is

owned by us;

"**Shanxi Other Mines**" refers to the seven of our jointly-operated mines, including Shangtan mine, Jindui mine, Shicao mine, Nanpo mine, Xishan mine, Niucaogou mine and Sunjiata mine in Shanxi Province that became the mining areas of our new own mine in 2010;

"**SHFE**" refers to the Shanghai Futures Exchange;

"**Shuicheng Panlong**" refers to Shuicheng County Panlong Coal Co., Ltd.;

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"**Simandou Project**" refers to the project to develop and operate the Simandou iron ore mine located in Guinea in West Africa as further described in the Simandou joint development agreement dated July 29, 2010 entered into amongst Rio Tinto, Rio Tinto Iron Ore Atlantic Limited and us for the purpose of development of the Simandou Project;

"**sintering process**" refers to a refining process employed to extract alumina from bauxite by mixing ground bauxite with supplemental materials and burning the mixture in a coal-fired kiln;

"**smelting**" refers to the electrolytic process used to produce molten aluminum from alumina;

"**tonne**" refers to the metric ton, a unit of weight, that is equivalent to 1,000 kilograms or 2,204.6 pounds;

"**US\$**", "**dollars**" or "**U.S. dollars**" refers to the legal currency of the United States;

"**Xinan Aluminum**" refers to Xinan Aluminum (Group) Company Limited;

"**Xincheng**" refers to Henan Xincheng Construction Supervisory Services Company Limited, a subsidiary that we acquired in October 2009;

"**Yichuan Power**" refers to Yichuan Power Industries Group Company;

"**Zhangze Electric Power**" refers to Shanxi Zhangze Electric Power Co., Ltd.;

"**Zhaogu Coal**" refers to Jiaozuo Coal Group Xinxiang (Zhaogu) Energy Co., Ltd.;

"**Zhongzhou Aluminum**" refers to Henan Zhongzhou Aluminum Construction Company Limited, a subsidiary that we acquired in October 2009;

"**Zunyi Alumina**" refers to Chalco Zunyi Alumina Co., Ltd., 73.28% of the equity interest of which is owned by us; and

"**Zunyi Aluminum**" refers to Zunyi Aluminum Co., Ltd., 62.1% of the equity interest of which is owned by us.

Translations of amounts in this annual report from Renminbi to U.S. dollars and vice versa have been made at the rate of RMB6.0537 to US\$1.00, the exchange rate as set forth in the H.10 statistical release of the Federal Reserve Board

for December 31, 2013. We make no representation that any Renminbi or U.S. dollar amounts could have been, or could be, converted into U.S. dollars or Renminbi, as the case may be, at any particular rate, the rates stated below, or at all. See "Item 3. Key Information - Selected Financial Data - Exchange Rate Information" for historical exchange rates between the Renminbi and the U.S. dollar.

Any discrepancies in any table between the amounts identified as total amounts and the sum of the amounts listed therein are due to rounding.

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## **PART I**

### **ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS**

Not applicable.

### **ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE**

Not applicable.

### **ITEM 3. KEY INFORMATION**

#### **A. SELECTED FINANCIAL DATA**

##### **Historical Financial Information**

Our consolidated financial statements as of December 31, 2012 and 2013 and for the years ended December 31, 2011, 2012 and 2013 included in this annual report on Form 20-F have been prepared in accordance with International Financial Reporting Standards, or IFRSs, which includes all International Accounting Standards and Interpretations, as issued by the International Accounting Standards Board, or the IASB. We disposed of substantially all of our aluminum fabrication operations to Chinalco in June 2013. As a result, the operating results of our aluminum fabrication segment were presented as a discontinued operation in our consolidated statement of comprehensive income for the year ended December 31, 2013. Our consolidated statements of comprehensive income for the years ended December 31, 2011 and 2012 as presented in this annual report are revised to reflect the reclassification between continuing operations and discontinued operation accordingly. We make an explicit and unreserved statement of compliance with IFRSs with respect to our consolidated financial statements as of December 31, 2012 and 2013 and for the years ended December 31, 2011, 2012 and 2013 included in this annual report. Ernst & Young, our current independent registered public accounting firm, has issued an unqualified auditor's report on our consolidated statements of financial position as of December 31, 2012 and 2013, and the related consolidated statements of comprehensive income, statements of changes in equity and statements of cash flows for the years ended December 31, 2012 and 2013. PricewaterhouseCoopers, our predecessor independent registered public accounting firm, has reissued an unqualified auditor's report on our consolidated statement of comprehensive income, statement of changes in equity and statement of cash flows for the year ended December 31, 2011.

The following tables present selected comprehensive income data and cash flows data for the years ended December 31, 2009, 2010, 2011, 2012 and 2013 and selected statements of financial position data as of December 31, 2009, 2010, 2011, 2012 and 2013 that were prepared under IFRSs. As the operating results of the aluminum fabrication segment have been presented as a discontinued operation in our consolidated statement of comprehensive income for the year ended December 31, 2013, the comparative figures for our consolidated statements of comprehensive income for the years ended December 31, 2009, 2010, 2011 and 2012 are revised to reflect the reclassification between continuing operations and discontinued operation accordingly. The selected financial information for the years ended and as of December 2011, 2012 and 2013 has been derived from, and should be read in conjunction with, the audited consolidated financial statements and their notes included elsewhere in this annual report.

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	Year Ended December 31,					
	2009	2010	2011	2012	2013	2013
	RMB	RMB	RMB	RMB	RMB	US\$
<i>(in thousands, except per share and per ADS data)</i>						
<b>CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME DATA</b>						
<b>Continuing Operations</b>						
Revenue	65,866,080	113,060,949	138,205,723	143,436,995	169,431,235	27,988,046
Cost of sales	(64,198,931)	(105,647,804)	(130,835,875)	(143,425,940)	(166,679,798)	(27,533,541)
Gross profit	1,667,149	7,413,145	7,369,848	11,055	2,751,437	454,505
Selling and distribution expenses	(1,203,588)	(1,448,100)	(1,487,996)	(1,833,983)	(1,859,220)	(307,121)
General and administrative expenses	(2,795,963)	(2,449,996)	(2,553,358)	(2,750,222)	(2,946,879)	(486,790)
Research and development expenses	(177,252)	(162,021)	(206,430)	(184,683)	(193,620)	(31,984)
Impairment loss on property, plant and equipment	(623,791)	(701,781)	(279,750)	(19,903)	(501,159)	(82,786)
Other income	146,746	316,752	159,774	734,852	805,882	133,122
Other gains/(losses), net	368,881	471,281	502,462	(16,989)	7,399,252	1,222,269

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Operating (loss)/profit from continuing operations	(2,617,818)	3,439,280	3,504,550	(4,059,873)	5,455,693	901,215
Finance costs, net	(1,828,881)	(2,190,355)	(2,916,791)	(4,060,624)	(5,233,070)	(864,441)
Operating (loss)/profit from continuing operations less finance costs	(4,446,699)	1,248,925	587,759	(8,120,497)	222,623	36,774
Share of (losses)/profits of joint ventures	(50,392)	233,784	122,262	37,040	148,749	24,572
Share of profits of associates	77,056	239,458	400,706	256,081	511,869	84,555
(Loss)/profit before income tax from continuing operations	(4,420,035)	1,722,167	1,110,727	(7,827,376)	883,241	145,901
Income tax benefit/(expense) from continuing operations	742,524	(398,739)	(121,175)	371,092	(339,551)	(56,090)
(Loss)/profit for the year from continuing operations	(3,677,511)	1,323,428	989,552	(7,456,284)	543,690	89,811
<b>Discontinued operation</b>						
(Loss)/profit for the year from discontinued operation	(1,002,083)	(354,290)	(299,048)	(1,187,299)	207,144	34,218
(Loss)/profit for the year	(4,679,594)	969,138	690,504	(8,643,583)	750,834	124,029
<b>(Loss)/profit Attributable to:</b>						
Owners of the parent	(4,642,894)	778,008	237,974	(8,233,754)	975,246	161,099
Non-controlling interests	(36,700)	191,130	452,530	(409,829)	(224,412)	(37,070)
Dividends	-	154,179	-	-	-	-

Basic and diluted (loss)/earnings per share	(0.34)	0.06	0.02	(0.61)	0.07	0.01
Earnings/(loss) per ADS	(8.58)	1.44	0.44	(15.22)	1.80	0.30
Dividends (expressed in RMB and US\$ per share and per ADS)						
Interim dividends per share	-	-	-	-	-	-
Interim dividends per ADS	-	-	-	-	-	-
Special dividends per share	-	-	-	-	-	-
Special dividends per ADS	-	-	-	-	-	-
Final dividends per share	-	-	0.0114	-	-	-
Final dividends per ADS	-	-	0.2850	-	-	-
Proposed dividends per share	-	0.0114	-	-	-	-
Proposed dividends per ADS	-	0.2850	-	-	-	-

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## As of December 31,

	2009	2010	2011	2012	2013	2013
	RMB	RMB	RMB	RMB	RMB	US\$
	<i>(in thousands)</i>					
<b>CONSOLIDATED STATEMENTS OF FINANCIAL POSITION DATA</b>						
Total current assets	36,333,877	41,324,547	49,969,708	49,016,016	63,065,421	10,417,666
Total non-current assets	97,641,312	99,997,492	107,164,449	126,000,866	136,441,633	22,538,553
Total assets	133,975,189	141,322,039	157,134,157	175,016,882	199,507,054	32,956,219
Total current liabilities	40,029,861	55,733,547	62,360,398	83,853,411	96,737,581	15,979,911
Total non-current liabilities	38,364,171	28,401,637	36,619,073	37,392,321	49,067,354	8,105,350
Total liabilities	78,394,032	84,135,184	98,979,471	121,245,732	145,804,935	24,085,261
Net assets	55,581,157	57,186,855	58,154,686	53,771,150	53,702,119	8,870,958
Long-term interest bearing loans and (excluding current portion)	37,804,482	27,723,867	35,968,526	36,635,652	46,294,828	7,647,361

	Year Ended December 31,					
	2009	2010	2011	2012	2013	2013
	RMB	RMB	RMB	RMB	RMB	US\$
	<i>(in thousands)</i>					
<b>OTHER FINANCIAL DATA</b>						
Net cash flows (used in)/generated from operating activities	(705,954)	7,103,859	2,489,756	1,122,352	8,251,338	1,363,024
Net cash flows used in investing activities	(9,477,193)	(8,260,317)	(9,714,547)	(23,153,090)	(7,686,069)	(1,269,648)
Net cash flows generated from financing activities	1,576,713	2,717,553	8,842,453	20,428,953	1,758,409	290,468
Net (decrease)/increase in cash and cash equivalents	(8,606,434)	1,561,095	1,617,662	(1,601,785)	2,323,678	383,844

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### Exchange Rate Information

The following table sets forth information concerning exchange rates between the Chinese Renminbi and the U.S. dollar for the periods indicated. These rates are provided solely for your convenience and are not necessarily the exchange rates that we used in this annual report or will use in the preparation of our periodic reports or any other information to be provided to you. The source of these rates is the Federal Reserve H.10 Statistical Release. On March 28, 2014, the exchange rate for Renminbi was US\$1.00 = RMB6.2117.

Period	Period End	Average(1)	Low	High
	<i>(RMB per US\$1.00)</i>			
2009	6.8259	6.8307	6.8470	6.8176
2010	6.6000	6.7603	6.8330	6.6000
2011	6.2939	6.4475	6.6364	6.2939
2012	6.2301	6.2990	6.3879	6.2221
2013	6.0537	6.1412	6.2438	6.0537
September	6.1200	6.1198	6.1213	6.1178
October	6.0943	6.1032	6.1209	6.0815
November	6.0922	6.0929	6.0993	6.0903
December	6.0537	6.0738	6.0927	6.0537
2014				
January	6.0590	6.0509	6.0600	6.0402
February	6.1448	6.0816	6.1448	6.0591

March (through March 28, 2014)	6.2117	6.1707	6.1183	6.2273
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(1) Annual average are calculated by averaging the rates on the last business day of each month during the annual period. Monthly averages are calculated by averaging the rates on each business day during the month.

## **B. CAPITALIZATION AND INDEBTEDNESS**

Not applicable.

## **C. REASONS FOR THE OFFER AND USE OF PROCEEDS**

Not applicable.

## **D. RISK FACTORS**

Our business and financial condition and results of operations are subject to various changing business, competitive, economic, political and social conditions in China and worldwide. In addition to the factors discussed elsewhere in this annual report, the following are some of the important factors that could cause our actual results to differ materially from those projected in any forward-looking statements.

*Our business is vulnerable to downturns in the general economy and industries in which we operate or which we serve. A reduction in demand could materially and adversely affect our business, financial condition and results of operations.*

Demand for our products depends on the general economy and level of activity and growth in the industries where we operate or serve. Development of the relevant industries is subject to various factors, including but not limited to market fluctuations of prices of commodities, general political or economic conditions, technology development, government investment plans and regulations, fluctuation in global production capacity and global and regional weather conditions, many of which are beyond our control. Unfavorable financial or economic conditions, such as those caused by the recent global financial and economic crisis, including the sovereign-debt crisis in the European Union and the continued weakness and uncertainty regarding the durability of the emerging economic recovery have adversely affected the global economy and resulted in a significant decrease in our sales volumes. If a global recession recurs, demand for our products may continue to decline. In addition, concerns over inflation, energy costs, geopolitical issues, the availability and cost of credit, unemployment, consumer confidence, declining asset values, capital market volatility and liquidity issues have created difficult operating conditions for us in the past and may continue to do so in the future. Furthermore, the PRC Government has, from time to time, adjusted its monetary, fiscal and other policies and measures to manage the rate of growth of the economy or the overheating and overcapacity in certain industries or markets. As a result, the general economy in the PRC or the world or any particular industry in which we operate or which we serve may grow at a lower-than-expected rate or even experience a downturn. Uncertainty about future economic conditions makes it challenging for us to forecast our results of operations, make business decisions and identify risks that may affect our business. If we are not able to timely and appropriately adapt to changes resulting from the difficult macroeconomic environment, our business, financial condition and results of operations may be materially and adversely affected.



***Volatility in the prices of alumina, primary aluminum, other non-ferrous metal and other commodities may adversely affect our business, financial condition and results of operations.***

The prices of the products we produce and trade, including alumina, primary aluminum, other non-ferrous metal and coal products, have historically fluctuated and are expected to continue fluctuating in response to general economic conditions, supply and demand and the level of global inventories, which are beyond our control.

We price our alumina and primary aluminum products by reference to international and domestic market prices, and domestic supply and demand, each of which may fluctuate beyond our control. Primarily as a result of the recovery of the global economy from the global financial crisis, the Australian FOB spot price of alumina and the international spot price of primary aluminum on the LME reached a high of US\$440 per tonne and US\$2,802 per tonne, respectively, in the first half of 2011, compared with US\$390 per tonne and US\$2,447 per tonne, respectively, in 2010. However, since the third quarter of 2011, demand for alumina and primary aluminum has been negatively affected by the European debt crisis. As a result, the Australian FOB spot price of alumina and the international spot price of primary aluminum on the LME have been generally decreasing and reached a low of US\$308 per tonne and US\$1,837 per tonne, respectively, in 2012. In 2013, demand for alumina and primary aluminum fluctuated. The Australian FOB spot price of alumina reached a high of US\$351.5 and a low of US\$312.5 per tonne and the international spot price of primary aluminum on the LME reached a high of US\$2,123.0 per tonne and a low of US\$1,694.5 per tonne in 2013. Our average external selling price of self-produced alumina and primary aluminum decreased by approximately 5.1% and 6.9%, respectively, from 2012 to 2013. Because most of our costs are fixed, we may not be able to respond promptly to a sudden decrease in alumina or primary aluminum prices. There is no assurance that there will be no further falls in prices of our key products, including alumina, primary aluminum and other non-ferrous metal, which may materially and adversely affect our business, financial condition and results of operations.

In addition, as the profit margin of trading is based on price fluctuations in the short term, we need to make the correct prediction of the price fluctuations of the non-ferrous metal products and coal products on the markets to ensure the profit margin. If the price fluctuations on the market do not match our prediction, we may incur substantial losses. In addition, as we generate profit from the differences between the purchasing and sales prices of the non-ferrous metal products we deal in, significant fluctuations in the prices of the commodities we deal in may cause the value of the outsourced products in transit or in inventory to decline, and if the carrying value of our existing inventories exceeds the market price in the future periods, we may need to make additional provisions for our inventories' value. As a result, any significant fluctuation in international market prices could materially and adversely affect our business, financial condition and results of operations.

***Our business requires substantial capital investments that we may be unable to fulfill.***

Our plans to upgrade and expand our production capacity will require substantial capital expenditures. See "Item 4. Information on the Company - D. Property, Plants and Equipment - Our Expansion." We may also need additional funding for debt servicing, working capital, other investments, potential acquisitions and joint ventures and other corporate requirements. As a result, we expect to incur total capital expenditures of approximately RMB9.2 billion in 2014. We may seek external financing to satisfy our capital needs if cash generated from our operations is insufficient

to fund our capital expenditures or if our actual capital expenditures and investments exceed our plans. Our ability to obtain external financing at reasonable costs and on acceptable terms is subject to a variety of uncertainties. Failure to obtain sufficient funding for our development plans could adversely affect our business and prospects.

***We incurred losses in the past and may not achieve sustained profitability in the future.***

Although we were profitable in 2011 and 2013, we incurred a net loss of approximately RMB8.6 billion in 2012. We may incur losses in the future and we cannot assure you that we will sustain profitability in the future.

In addition, we expect that we will continue relying on, in addition to our cash flows generated from operating activities, bank and other loans as well as proceeds from equity-linked notes and bond offerings, to fund our business operations and expansions. Our borrowing costs and access to the debt capital markets, and thus our liquidity, depend significantly on our public credit ratings. These ratings are assigned by rating agencies, which may reduce or withdraw their ratings or place us on "credit watch", which would have negative implications. A history of net losses may result in a deterioration of our credit ratings, which could increase our borrowing costs and limit our access to the capital markets, which in turn, could reduce our earnings and adversely affect our liquidity.

***Our historical results may not be indicative of our future prospects.***

We acquired an aggregate of 70.82% of the equity interest in Ningxia Energy on January 23, 2013. Ningxia Energy is an integrated power generation company with coal mines located in Ningxia Autonomous Region. Its principal business includes conventional coal-fire power generation and renewable energy generation. After the acquisition of Ningxia Energy, we have established an energy segment in January 2013 to include (i) operations of Ningxia Energy and (ii) our other energy related operations that were formerly included in our corporate and other operating segment. In addition, in line with our development strategy to focus on the development of our core business of alumina and primary aluminum operations, where we have established leading market positions, and to reduce future capital expenditures on iron ore development, improve asset-to-debt ratio and generate expected cash flows, we disposed of 65% of the equity interest in Chalco Iron Ore to a wholly-owned subsidiary of Chinalco on December 26, 2013 pursuant to the approval of shareholders at the 2013 second extraordinary general meeting held on November 29, 2013. For details of the disposal of Chalco Iron Ore, please see "Item 4. Information on the Company - A. History and Development of the Company - Overseas Development." As a result, our historical results may not be indicative of our future prospects and result of operations.

***Our failure to successfully manage our business expansion, including our expansion into new areas of business, would have a material adverse effect on our results of operations and prospects.***

We have invested in business expansion in line with our development strategy through organic growth, acquisitions and joint ventures. In addition to continuing to expand our existing business lines, we may, from time to time and when we deem appropriate, expand into new industries which we believe have synergies with our existing operations. For example, we have successfully enhanced our energy-related operations through the acquisition of Ningxia Energy in 2013 and participation in joint ventures and strategic investments in coal mining since 2010.

Our expansion has created, and will continue to place, substantial demand on our resources. Managing our growth and integrating the acquired businesses will require us to, among other things:

- \* comply with the laws, regulations and policies applicable to the acquired businesses, including obtaining timely approval for the construction or expansion of production and mining facilities as required under the PRC law;
- \* maintain adequate control on our business expansion to prevent, among other things, project delays or cost overruns;
- \* gain market acceptance for new products and services and establish relationships with new customers and suppliers;
- \* achieve sufficient utilization of new production facilities to recover costs;
- \* manage relationships with employees, customers and business partners during the course of our business expansion and integration of new businesses;
- \* attract, train and motivate members of our management and qualified workforce to support successful business expansion;
- \* access debt, equity or other capital resources to fund our business expansion, which may divert financial resources otherwise available for other purposes;
- \* divert significant management attention and resources from our other businesses; and
- \* strengthen our operational, financial and management controls, particularly those of our newly acquired subsidiaries, to maintain the reliability of our reporting processes.

Any difficulty meeting the foregoing or similar requirements could significantly delay or otherwise constrain our ability to implement our expansion plans, or result in failure to achieve the expected benefits of the combination or acquisition or write-offs of acquired assets or investments, which in turn would limit our ability to increase operational efficiency, reduce marginal manufacturing costs or otherwise strengthen our market position. Failure to obtain the intended economic benefits from the business expansion could adversely affect our business, financial condition, results of operations and prospects. In addition, we may also experience mixed results from our expansion plans in the short term.

Furthermore, there is no assurance that we will be able to identify attractive acquisition targets, negotiate acquisitions on favorable terms, obtain necessary governmental approvals on investments, if applicable, accurately estimate the mineral resources and reserves of these acquisition targets or obtain the necessary funding to complete such acquisitions on commercially acceptable terms or at all. Acquisitions may result in the incurrence and inheritance of debts and other liabilities, assumption of potential legal liabilities in respect of the acquired businesses, and incurrence of impairment charges related to goodwill and other intangible assets, any of which could harm our businesses, financial condition and results of operations. In particular, if any of the acquired businesses fails to perform as we expect, we may be required to recognize a significant impairment charge, which may materially and adversely affect our businesses, financial condition and results of operations. As a result, there can be no assurance that we will be able to achieve the strategic purpose of any acquisition, the desired level of operational integration or our investment return target.

***Our joint ventures and strategic investment may not be successful.***

We may from time to time enter into joint venture arrangements to grow our business and operations. For example, since 2010, we have participated in joint ventures and strategic investment in coal mining, in line with our development strategy to diversify our product offering and partially offset our future energy costs, as well as supply a portion of the coal we consume in our operations. In addition, we acquired 70.82% of the equity interest in Ningxia Energy in January 2013, which had joint ventures or held minority interests in a number of power generation companies.

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We have non-controlling interests in a number of joint ventures. Although we have not been materially constrained by the nature of our ownership interests, no assurance can be given that our joint venture partners will not exercise their power of veto or their controlling influence in any of our joint ventures in a way that will hinder our corporate objectives and reduce any anticipated cost savings or revenue enhancement resulting from these joint ventures. In addition, whether or not we hold majority interests or maintain operational control in such joint ventures, such arrangements necessarily involve special risks and our joint venture partners may:

- \* have economic or business interests or goals that are inconsistent with or opposed to ours;
- \* exercise veto rights so as to block actions that we believe to be in our or the joint venture's best interests;
- \* take action contrary to our policies or objectives with respect to the investments; or
- \* as a result of financial or other difficulties, be unable or unwilling to fulfill their obligations under the joint venture, other agreements, such as contributing capital to expansion or maintenance projects.

***Failure to maintain optimal utilization of our production facilities will adversely affect our gross and operating margins.***

During 2012 and 2013, we expanded the production capacity by completing the construction, upgrading or remoulding of some of our alumina and primary aluminum production facilities. We expect our production capacity expansion in recent years to increase our costs of sales, in particular, depreciation and amortization costs. If we are able to maintain satisfactory facility utilization rates and increase our production output, our production capacity expansion will enable us to reduce our unit costs through economies of scale, as fixed costs will be spread over a higher volume of output units. Conversely, underutilization of our existing and newly acquired or constructed production facilities may increase our marginal production costs and prevent us from realizing the intended economic benefits of our expansion. For example, as a result of the decrease in our procurement of imported bauxite from Indonesia in response to the change in Indonesian bauxite export policy, we suspended the operations of certain alumina production facilities in our Shandong branch, Henan branch and Zhongzhou branch with an aggregate annual designed production capacity of 170,000 tonnes in 2012, which adversely affected our results of operations and financial condition. Please see "- Our profitability and operations could be adversely affected if we are unable to obtain a steady supply of raw materials at competitive prices." In addition, considering the sustained weak primary aluminum pricing environment and deterioration in primary aluminum prices in 2013 which could not be offset through decreases in our costs, we suspended the operations of certain primary aluminum production facilities in our Shandong branch, Guizhou branch, Zunyi Aluminum, Guangxi branch and Research Institute with an aggregate annual designed production capacity of 380,000 tonnes since June 2013. We also increased our external purchases of alumina and primary aluminum for trading purposes to capitalize on fluctuating market prices in 2012 and 2013 and to enhance resource planning to achieve cost savings in our production. The increase in our external purchases has

reduced our utilization of certain production facilities, but has not resulted in a proportionate decrease in fixed costs such as leases and depreciation of plant, property and equipment. Given our high proportion of fixed costs, failure to maintain historical utilization rates may adversely affect our gross and operating margins.

Furthermore, our primary aluminum production may be adversely affected by the administrative policies and orders implemented by the local governments to fulfill China's Energy-Saving and Emission Reduction Goals. Please see "- We are subject to administrative policies and orders relating to China's Energy-Saving and Emission Reduction Goals that could adversely affect our production."

***We may be required to record impairment charges in the future.***

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If business conditions deteriorate, long lived assets need to be reviewed for possible impairment. An impairment loss needs to be recognized to the extent that the carrying amount exceeds the recoverable amount. We recorded impairment loss on property, plant and equipment during the three years ended December 31, 2011, 2012 and 2013. We cannot guarantee that we will not incur increased impairment loss in the future, for various reasons including, but are not limited to, a sustained decline in our stock price, strategic decisions made in response to changes in economic and competitive conditions, the impact of the economic environment on our customer base or a material adverse change in our relationship with significant customers. If we record significant impairment charges, our results of operations may be materially and adversely affected.

***Our operations consume substantial amounts of energy, and our profitability may decline if energy costs rise or if our energy supplies are interrupted.***

Our operations consume substantial amounts of energy. Although we generally expect to meet the energy requirements for our alumina refineries and primary aluminum smelters from a combination of internal and external sources, our results of operations may be materially and adversely affected by the following:

- \* significant increases in electricity costs; or
- \* curtailment of the operation of one or more refineries or smelters due to our inability to extend energy supply contracts upon their expiration.

Cost of electricity is the principal production cost in our primary aluminum operations. Although our average electricity cost per kilowatt-hour, or kWh, of our primary aluminum smelters decreased by approximately 5.1% from 2012 to 2013, there is no assurance that demand for and prices of electricity will not increase in the future. If we are unable to pass on increases in energy costs to our customers, our operating margin, financial condition and results of operations could be materially and adversely affected.

In addition, interruptions in the supply of power can result in costly production shutdowns, increased costs associated with restarting production and the waste of production in progress. A sudden loss of power, if prolonged, can cause damage to or the destruction of production equipment and facilities. In such an event, we may need to expend significant capital and resources to repair or replace the affected production equipment to restore our production capacity. Various regions across China have experienced shortages and disruptions in electrical power, especially during peak demand in the summer or during severe weather conditions. We cannot assure you that our operations will not suffer from shortages or disruptions in electrical power, any occurrence of which could have a material and adverse impact on our business, financial condition and results of operations.

***Our operations consume substantial amounts of coal, and our operations may be adversely affected if we are not able to procure sufficient coal or if coal prices rise significantly.***

We rely heavily on coal as our energy and fuel source in our operations. As we increase our alumina refining capacity, our consumption of coal will increase accordingly. If we are not able to obtain the amount of coal needed for our production due to a shortage of coal, constraints on coal transportation or any other reason, we may be forced to reduce our production output or suspend our alumina refining operations, which could materially and adversely affect our financial condition and results of operations. Although we have acquired equity interest in a number of coal mines, we expect to continue to rely substantially on third-party coal suppliers for the supply of coal. In addition, although our average purchase price per unit tonne of thermal coal used in our alumina production decreased by 10.6% from 2012 to 2013, there is no assurance that the price of coal will not increase in the future. If we are unable to pass on increases in coal prices to our customers or offset price increases through productivity improvements, our operating margin, financial condition and results of operations could be adversely affected.

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***Our business and industry may be affected by the development of alternative energy sources and climate change.***

Our operations consume substantial amounts of coal. Coal combustion generates significant greenhouse gas and other pollutants, and the effects of climate change resulting from global warming and increased pollution levels may provide incentives for governments to promote or invest in "green" energy technologies such as wind, solar, nuclear and biomass power plants, or to reduce their consumption of conventional energy sources such as coal. A number of governments or governmental bodies have introduced or are contemplating legislative and regulatory changes in response to the potential impacts of climate change. These regulatory mechanisms may impact our operations directly or indirectly through customers or our supply chain. We may have to increase our capital expenditures in order to comply with such revised or new legislation or regulations, and may realize changes to profit or loss arising from increased or decreased demand for our products and indirectly, from changes in costs of goods sold, which may adversely affect our results of operations and financial condition.

In addition, we have invested in coal mining operations. We are affected by the growth of the PRC thermal power industry, which relies on coal as main source of fuel. The PRC thermal power industry may be affected by the development of alternative energy sources, climate change and global environmental factors. In particular, pursuant to China's 12th Five-Year Plan for Environmental Protection, the PRC government plans to continue to encourage the development of alternative energy sources, such as wind power, solar power, biomass and geothermal energy, from 2011 to 2015. As such, alternative energy industries may rapidly develop and gradually gain mainstream acceptance in the PRC and the rest of the world. If alternative energy technologies continue to develop and prove suitable for wide commercial application in the PRC and overseas, demand for conventional energy sources, such as coal, could be reduced, which could have a material and adverse effect on the coal mining industry and, consequently, our business, results of operations and financial condition.

***We may be unable to continue competing successfully in the markets in which we operate.***

We face competition from both domestic and international primary aluminum producers. Our principal competitors are domestic smelters, some of which are consolidating and expanding their production capacities. These smelters compete with our primary aluminum operations on the basis of cost, quality and pricing. In addition, we face increasing competition from international alumina and primary aluminum suppliers as a result of the elimination of tariffs on imports of primary aluminum and alumina into China. Increasing competition in our product markets may reduce our selling prices or sales volumes, which will have a material adverse effect on our financial condition and results of operations. If we are unable to price our products competitively, maintain or increase our current share of China's alumina and primary aluminum markets or otherwise maintain our competitiveness, our financial condition,

results of operations and profitability could be materially and adversely affected.

***Our overseas expansion exposes us to political and economic risks, commercial instability and events beyond our control in the countries in which we plan to operate.***

We are currently undertaking a number of overseas projects, including the bauxite mining projects in Laos and Indonesia, which require significant capital investment. As we are new to these overseas markets, we cannot assure you that our overseas expansion or investments will be successful or that we will not suffer foreign exchange losses in connection with our overseas investment. For example, in 2007, we entered into a development agreement with the Queensland State Government of Australia ("Queensland State Government") to develop a bauxite and alumina project, the Aurukun Project. However, due to the change in market conditions of global aluminum industries, the Aurukun Project could no longer continue under the original framework. We engaged a series of negotiations with the Queensland State Government, but in June 2011, the Queensland State Government terminated the negotiation. As a result, we had a total impairment charge of RMB651 million of the carrying value of the capitalized development expenditures pertaining to the Aurukun Project in 2010 and 2011. In addition, operations in the overseas markets also expose us to a number of risks including expropriation and nationalization of our assets in foreign countries, civil unrest, acts of terrorism, war, or other armed conflict; natural disasters; inflation; currency fluctuations, devaluations and conversion restrictions; confiscatory taxation or other adverse tax policies, governmental activities that limit or disrupt markets, restrict payments or limit the movement of funds, governmental activities that may result in the deprivation of contractual rights; lack of a well-developed legal system that makes it difficult to enforce our contractual rights; and governmental activities that may result in the inability to obtain or retain licenses required for operations.

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***Our profitability and operations could be adversely affected if we are unable to obtain a steady supply of raw materials at competitive prices.***

Historically, the price for bauxite, our most important raw material for alumina production, has been volatile. We obtain bauxite for our operations from three major sources, including mines that we own or jointly operate and external suppliers. See "Item 4. Information on the Company - B. Business Overview - Raw Materials - Alumina - Supply." The extent to which we procure bauxite from each of these sources affect the security of our supply or cost of bauxite. The supply of bauxite could be affected by various factors, including geographic conditions of bauxite mines, government policies, market prices and competition, many of which are beyond our control. We rely on overseas suppliers to obtain a substantial portion of bauxite we use for production, including Indonesia, a major source of imported bauxite of us. In May 2012, the Government of Indonesia imposed a ban on the exportation of 14 types of unprocessed minerals, including bauxite, with an exception for mining companies that plan to build local processing facilities. For mining companies with plans to build local processing facilities, the Government of Indonesia imposes a 20% export tariff on the exportation of these 14 types of minerals. In response to the change in Indonesian bauxite export policy, we reduced our procurement of bauxite from Indonesia, which resulted in a decrease in our total supply of imported bauxite. As a result, in 2012, we suspended the operations of certain alumina production facilities in our Shandong branch, Henan branch and Zhongzhou branch with an aggregate annual designed production capacity of 170,000 tonnes. In January 2014, the Government of Indonesia imposed an absolute ban on the exportation of unprocessed bauxite and nickel without any exception. Prices of imported bauxite may continue to increase as a result of such ban. In addition, as the result of the ban, since January 2014, we have not been able to export the bauxite produced by our bauxite mines in Indonesia for the use of our alumina refineries in China. If we exhaust our stockpiles and cannot find an alternative source of imported bauxite at competitive prices, our

financial condition, results of operations and profitability could be materially and adversely affected.

In addition, our results of operations are affected by increases in the cost of other raw materials and other key inputs such as energy. If we cannot obtain a steady supply of key raw materials at competitive prices, our financial condition and results of operations could be materially and adversely affected.

***Any transportation interruption or any material increase in our transportation costs could have a material and adverse effect on our business, financial condition and results of operations.***

Our operations require the reliable transportation of raw materials and supplies to our refining and smelting sites and finished products to our customers. Our alumina products are mainly transported by rail or trucks and our primary aluminum products are delivered to our customers primarily by rail. There is no assurance that we can always enjoy sufficient transportation capacity or we will not experience transportation interruption in the future. Furthermore, natural disasters may cause interruption to the transportation system, which could in turn affect the transportation of our products. In addition, any changes in fuel prices or fuel supply may be unpredictable and beyond our control. There is no assurance that shortage of fuel will not occur in the future. Any surge in fuel prices or shortage of fuel supply may lead to increases in our operation and transportation costs. If we are unable to make timely deliveries due to logistical and transportation disruptions, or transfer the increased costs to our customers, our production, reputation and results of operations may be adversely affected.

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***We may not successfully develop and implement new methods and processes.***

A main objective of our research and development is to develop new methods and processes to improve the efficiency of our alumina refineries to increase our production yield from bauxite with low alumina-to-silica ratio. If the supply of high quality bauxite with a high alumina-to-silica ratio in China declines, our failure to develop such methods and processes and incorporate them into our production could impede our efforts to reduce unit costs and diminish our competitiveness. For example, in 2012, partly due to the decline in the quality of domestically sourced bauxite, our average cost of alumina per tonne increased by approximately RMB152 from that in 2011.

***The bauxite reserve data in this annual report are only estimates, which may prove to be inaccurate.***

The bauxite reserve data on which we base our production, revenue and expenditure plans are estimates that we have developed internally and may prove inaccurate. There are numerous uncertainties inherent in estimating quantities and qualities of reserves, including many factors beyond our control. If these estimates are inaccurate or the indicated tonnages are not recovered, our business, financial condition, and results of operations may be materially and adversely affected.

***Our mining operations have limited mine lives and eventual closure of these operations will entail costs and risks regarding ongoing monitoring, rehabilitation and compliance with environmental standards.***

Our existing mining operations in the PRC and overseas have limited mine lives and will eventually be depleted. We need to perform certain procedures to remedy and rehabilitate the environmental and social impact that our mining operations have had on local communities and the environment. Remediation, rehabilitation, closure and removal of our facilities will incur various costs and are subject to various risks. The key costs and risks for mine closures include, but are not limited to, (i) long-term management of permanent engineered structures and acid rock drainage;



(ii) closure in accordance with local or international environmental standards; (iii) orderly retrenchment of employees and the third-party contractors; and (iv) relinquishment of the site with associated permanent structures and community development infrastructure and programmes to new owners. There is no assurance that such closure of mines will be successful and without delays or additional costs, in which case we may be subject to increased costs, penalties or other administrative actions, damages to reputation, even suspension and cancellation of mining permits, the occurrence of which would cause a material and adverse effect to our business, financial condition and results of operations.

***Failure to discover new reserves or resources, maintain or enhance existing reserves or resources, develop new mining operations or expand our current mining operations could negatively affect our business, financial condition and results of operations.***

Mining exploration is unpredictable in nature. The success of any mining exploration programme depends on various factors, many of which are beyond our control. Due to the unpredictable and speculative nature of the mining industry, there is no assurance that any exploration programme that we are currently undertaking or may undertake in the future will result in the discovery of valuable reserves or resources. There is no assurance that reported resources can be converted into reserves. Furthermore, actual results upon production may differ from those anticipated at the time of discovery. To access additional reserves in explored areas, we will need to successfully complete development projects, including but not limited to extending existing mines and developing new mines. There are a number of uncertainties inherent in the development and construction of any new mine or an extension of an existing mine, including but not limited to (i) the availability and timing of necessary governmental approvals; (ii) the timing and cost necessary to construct mining and processing facilities; (iii) the availability and cost of labor, utilities, auxiliary materials and other supplies and the accessibility of transportation and other infrastructure; and (iv) the availability of funds to finance construction and production activities. There is no assurance that any future exploration activities or development projects will extend the life of our existing mining operations or result in any new economic mining operations and such failure may have a material adverse effect on our business, financial condition and results of operations.

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***Our significant indebtedness could adversely affect our business, financial condition and results of operations.***

We are subject to a high degree of financial leverage. We have relied, and expect to continue to rely, on both short-term and long-term borrowings to fund a significant portion of our capital requirements. As of December 31, 2013, we had approximately RMB73.3 billion in outstanding short-term bonds and short-term bank borrowings (including the current portion of long-term bank and other borrowings) and RMB46.3 billion in outstanding long and medium-term bonds and long-term bank and other borrowings (excluding the current portion of these borrowings). Please see Note 21 to our audited consolidated financial statements for more detailed information about our borrowings. Primarily as a result of this, we had net current liabilities of RMB33.7 billion as of December 31, 2013. This level of debt could have significant consequences on our operations, including:

- \* making it more difficult for us to fulfill payment and other obligations under our outstanding debt, including repayment of our debt and credit facilities should we be unable to obtain extensions for any such debt or credit facilities before they mature. Please see "Item 5 - Operating and Financial Review and Prospects - B. Liquidity and Capital Resources" for maturities of our outstanding long-term borrowings;
- \* reducing the availability of cash flows to fund working capital, capital expenditures, acquisitions and other general corporate purposes;

- \* exposing us to interest rates fluctuations on our borrowings and the risk of being unable to rollover, extend or refinance our borrowings as necessary;
- \* potentially increasing the cost of additional financing and making it more difficult for us to conduct equity financings in the capital markets or obtain government approvals to seek additional financing; and
- \* putting pressure on our ADS price due to concerns of our ability to repay our debt.

Our ability to meet our payment and other obligations under our outstanding debt depends on our ability to generate cash flows in the future or to refinance such debt. We cannot assure you that our business will generate sufficient cash flows from operations to satisfy our obligations under our outstanding debt and to fund other liquidity needs. If we are not able to generate sufficient cash flows to meet such obligations, we may need to refinance or restructure our debt, reduce or delay capital investments, or seek additional equity or debt financing. The sale of additional equity securities could result in dilution to our ADS holders. A shortage of financing could in turn impose limitations on our ability to plan for, or react effectively to, changing market conditions or to expand through organic and acquisitive growth, thereby reducing our competitiveness. We cannot assure you that future financing will be available in amounts or on terms acceptable to us, if at all.

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***The instruments governing our senior debt contain certain financial and other covenants that restrict our ability to pay dividends, raise further debt and take other corporate actions which may adversely affect our business.***

In October 2013, we completed the issuance of US\$350 million in aggregate principal amount of 6.625% senior perpetual capital securities (the "Securities") through Chalco Hong Kong Investment Company Limited (the "Issuer") with guarantee by seven of our subsidiaries including Chalco HongKong Limited (the "Subsidiary Guarantors"). The indenture governing the Securities contain a number of significant financial and other covenants. Such covenants restrict, subject to certain exceptions, among other things, our and our subsidiaries' ability to create, or have outstanding, any security interest upon our or our subsidiaries' present or future undertaking, assets or revenues to secure any indebtedness which is in the form of bonds, notes, debentures, loan stock or other securities which for the time being are, or are intended to be or capable of being, quoted, listed or dealt in or traded on any stock exchange or over-the-counter or other securities market ("Relevant Indebtedness") which is issued outside the PRC, our ability to create or have any Relevant Indebtedness which is issued outside the PRC, our ability to create or have outstanding any guarantee or indemnity in respect of any Relevant Indebtedness which is issued outside the PRC and the Issuer's, Subsidiary Guarantors' and their respective subsidiaries' ability to create, or have outstanding, any security interest upon their present or future undertaking, assets or revenues to secure any Relevant Indebtedness or any guarantee or indemnity in respect of any Relevant Indebtedness or to sell or otherwise dispose of capital stock held or controlled by it in any direct or indirect subsidiary of Chalco HongKong Limited which is not a Subsidiary Guarantor.

As a result of the covenants, our ability to pay dividends or other distributions on our common shares and the ADSs may be limited. These covenants also restrict our ability to raise additional fund in the future through issuing Relevant Indebtedness which is issued outside the PRC or creating or having any guarantee or indemnity in respect of any Relevant Indebtedness which is issued outside the PRC and may restrict our ability to engage in some transactions that we expect to be of benefit to us.

The Securities are guaranteed by certain of our subsidiaries. A breach of any of the covenants in the indenture governing the Securities could result in a redemption of the Securities at our discretion or an increase of coupon rate

if we do not redeem the Securities upon a breach of such covenants. If we default under the Securities in the future, the holders may enforce their claims against the guarantors to satisfy our obligations to them. In addition, such default may result in a default and acceleration of our senior debt and the holders of our senior debt could gain ownership of the capital stock of certain of our wholly owned subsidiaries (if such capital stock is pledged for such senior debt) and/or enforce their claims against the assets of the guarantors (if guarantee is provided for such senior debt). We conduct substantially all of our operations in China and substantially all of our assets are located in China and, if we default under our senior debt, we would lose control or ownership of our assets and operations in China and there may be few or no assets remaining with which we could conduct our business or from which the claims of our other creditors could be satisfied.

***The interests of our controlling shareholder who exerts significant influence over us may conflict with ours.***

As of December 31, 2013, our largest shareholder, Chinalco, directly owned 38.56% of our issued share capital and indirectly owned an additional 2.89% of our issued share capital through its controlled entities. The interests of Chinalco may conflict or even compete with our interests and those of our public shareholders. Chinalco may take actions that are in the interest of its subsidiaries, associates and other related entities to our detriment. For example, Chinalco may seek to influence our decision as to the amount of dividends we declare and distribute. Any increase in our dividend payout would reduce funds otherwise available for reinvestment in our businesses and thus may adversely affect our future prospects and financial condition.

In addition, Chinalco and a number of its subsidiaries and associates provide a range of services to us, including engineering and construction services, social services, land and property leasing as well as the supply of raw and supplemental materials. It would be difficult to find an alternative source for some services that we receive from Chinalco. Our cost of operations may increase if Chinalco, its subsidiaries and associates are unable to continue providing such services to us.

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***We are subject to, and incur costs to comply with, environmental laws and regulations.***

As we produce air emissions, discharge waste water, and handle hazardous substances at our bauxite mines, alumina refineries and aluminum smelters, we are subject to, and incur costs to comply with, environmental laws and regulations.

Given the magnitude, complexity and continuous amendments to these laws and regulations, compliance therewith may be onerous or may involve substantial financial resources and other resources to establish efficient compliance and monitoring systems. The liabilities, costs, obligations and requirements associated with these laws and regulations may therefore be substantial and may delay the commencement of, or cause interruptions to, our operations. Non-compliance with the relevant laws and regulations applicable to our operations may even result in substantial penalties or fines, suspension or revocation of our relevant licenses or permits, termination of government contracts or suspension of our operations. Such events could impact our operating results, financial condition and reputation, all of which could adversely impact the Group's ability to be profitable and attract new customers. We were fined for breaches of environmental laws and regulations and there is no assurance that there will not be any further breaches in the future.

In addition, the environmental laws and regulations in the PRC and other jurisdictions in which we operate continue to evolve. As a result, we may incur significant additional costs if relevant laws and regulations change or

enforcement of existing laws and regulations becomes more rigorous. For instance, to comply with the requirement of desulphurization and denitration in China, we were requested to invest in upgrading or remoulding certain production facilities. Further, our overseas expansion projects are subject to foreign environmental laws and regulations. Failure to comply with environmental laws and regulations may trigger a variety of administrative, civil and criminal enforcement measures, including the assessment of monetary penalties, the imposition of remedial requirements and the issuance of orders enjoining future operations, all of which may materially and adversely affect our business operations.

***We are subject to administrative policies and orders relating to China's Energy-Saving and Emission Reduction Goals that could adversely affect our production.***

We are subject to administrative energy-saving and emission reduction policies and orders carried out by the central and provincial governments in accordance with China's Energy-Saving and Emission Reduction Goals. In 2010 and 2011, some of our primary aluminum production facilities were subject to power rationing carried out by some provincial governments to fulfill their energy-saving and emission reduction goals. Although power rationing only slightly reduced our primary aluminum production in 2010 and 2011 and the PRC central government has denounced it as an improper means to fulfill the Energy-Saving and Emission Reduction Goals, some or all of our primary aluminum production facilities may be subject to power rationing or other similar policies and orders from time to time in the future, which may adversely affect our production.

***Our business is subject to unplanned business interruptions that may adversely affect our performance.***

We may experience accidents in the course of our operations, which may cause significant property damage and personal injuries. Significant accidents and natural disasters may cause interruptions to our operations or result in property or environmental damage, an increase in operating expenses or loss of revenues. The occurrence of accidents, natural disasters and the resulting consequences may not be covered adequately, or at all, by the insurance policies we carry. In accordance with customary practice in China, we do not carry any business interruption insurance or third-party liability insurance for personal injury or environmental damage arising from accidents on our property or relating to our operations other than for our automobiles. Losses or payments incurred by us as a result of major accidents or natural disasters may have a material and adverse effect on our results of operations if such losses or payments are not fully insured.

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***We have not obtained valid titles or land use rights to certain properties or land parcels that we occupy.***

We had not obtained valid ownership certificates to certain properties that we occupy. These properties are used primarily for production plants. As of December 31, 2013, the book value of our properties with defective titles represented approximately 10.6% of our net asset value. In addition, we had not obtained land use rights to certain land parcels, which we use primarily for our production plants. As of December 31, 2013, the book value of these land parcels represented approximately 0.7% of our net asset value. We have applied to the appropriate authorities to obtain the relevant ownership certificates. We cannot give any assurance that ownership dispute will not occur or that third parties will not assert any claims against us for compensation in respect of any use of these properties or land parcels.

***Our business involves inherent risks and occupational hazards, which could damage our reputation, subject us to liability claims and cause substantial costs to us.***

Our business involves inherent risks and occupational hazards. Under our mining operations, we engage or may engage in certain inherently risky and hazardous activities, including, among others, operations at height or on dangerous terrains, underground excavation and construction, use of heavy machinery, mining and handling of flammable and explosive materials, and we are therefore subject to risks associated with these activities, including, among others, geological catastrophes, toxic gas and liquid leakages, equipment failures, industrial accidents, fire, explosions and underground water leakages. Although we conduct geological assessments on mining conditions and adapt our mining plans to the mining conditions at each mine, we cannot assure you that adverse mining conditions will not endanger our workforce, increase our production costs, reduce our bauxite or coal output or temporarily suspend our operations. The occurrence of any of the foregoing events or conditions could have a material adverse impact on our business and results of operations. Additionally, we are exposed to operational risks associated with industrial or engineering activities, such as maintenance problems or equipment failures. These risks and hazards may result in personal injury and fatal casualties, damage to or destruction of properties or production facilities, and pollution and other environmental damage. Any of these consequences, to the extent they are significant, could result in business interruption, possible legal liability and damage to our business reputation and corporate image.

Our mines and operating facilities may be damaged by water, gas, fire or cave-ins due to unstable geological structures. Any significant accident, business disruption or safety incident could result in substantial uninsured costs and the diversion of our resources, which could materially and adversely affect our business operations and financial condition.

***We may be subject to product liability claims.***

Some of the products we sell or manufacture may expose us to product liability claims relating to property damage or personal injury. The successful assertion of product liability claims against us could result in significant damage payments and harm to our reputation, which in turn could have a material adverse effect on our business, financial condition and results of operations.

***We are subject to risks normally associated with cross-border transactions, and our export products have been and may become subject to anti-dumping or countervailing duty proceedings.***

We generate revenue from exports of certain non-ferrous and ferrous metals and minerals products to foreign jurisdictions. Such foreign jurisdictions may take restrictive measures, including, among others, anti-dumping duties and other non-tariff barriers, to protect their own markets. Our sales in major overseas markets may be adversely affected by increases in or new impositions of anti-dumping duties, countervailing duties, quotas or tariffs imposed on our exports. Further increases in or new imposition of anti-dumping duties, countervailing duties, quotas or tariffs on our sales in these markets could adversely affect the exports to these regions in the future. By virtue of our transactions with parties outside the PRC, we will be subject to the risks normally associated with cross-border business transactions and activities. We will also be exposed to the risk of changes in social, legal, political and economic conditions in the foreign jurisdictions to which we export. In particular, unexpected changes in regulatory requirements, tariffs and other trade barriers and price or exchange controls could limit our operations and make the repatriation of profits difficult.

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***We are subject to litigation risks.***

In the ordinary course of business, claims involving project owners, customers, suppliers and subcontractors may be brought against us and by us in connection with our contracts. If we were found to be liable on any of the claims, we would have to incur a charge against earnings to the extent a reserve had not been established for the matter in our accounts, or to the extent the claims were not sufficiently covered by our insurance coverage. Both claims brought against us and by us, if not resolved through negotiations, are often subject to lengthy and expensive litigation or arbitration proceedings. Charges associated with claims brought against us and write-downs associated with claims brought by us could have a material adverse impact on our business, financial condition, results of operations and cash flow. Moreover, legal proceedings resulting in judgments or findings against us may harm our reputation and damage our prospects for future contract awards.

***We face counterparty risks.***

While we generally sell goods and provide services to reputable customers and evaluate the customers' credit in accordance with our internal risk management criteria, such as their credit history and likelihood of default, we have limited access to information about our customers and we may encounter difficulties in the collection of receivables in certain countries that we have less experience in our dealings. Therefore, we cannot guarantee that all of our customers will fully perform their obligations under their respective contracts with us, and the deterioration of any customers' credit or payment conditions may result in those customers defaulting on their contractual obligations, which could materially and adversely affect our business, financial condition and results of operations. In addition, disputes with governmental entities and other public organizations could potentially lead to contract termination if these remain unresolved or may take a considerably longer period of time to resolve than disputes with counterparties in the private sector, and payments from these entities and organizations may be delayed as a result.

***We may be exposed to claims in relation to the unsatisfactory performance of third-party service providers, and disputes with business partners may also adversely affect our business.***

We rely on third-party service providers for certain services, including but not limited to mining infrastructure construction, logistics services or warehouse management. Therefore, we are exposed to the risk that our third-party service providers may fail to perform their obligations, which may adversely affect our business operations. In addition, from time to time, we co-operate with business partners to develop our business, including acquiring strategic mining resources or businesses that complement our own business line. Furthermore, we operate certain mining projects through joint venture arrangements and may enter into further joint ventures in the future along with the expansion of our operations. We may have disputes with these business partners or joint venture partners over various aspects, such as performance of each party's obligations, scope of each party's responsibilities, product quality and logistics services. If such disputes cannot be settled in a timely manner, our financial condition and business may be adversely affected.

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***Failure to hire and retain management executives, technicians and other qualified personnel could adversely affect our business and prospects.***

The growth of our business operations depends on the continued services of our senior management team. The industry experience, expertise and contributions of our executives and other members of our senior management are essential to our continued success. We will require an increasing number of experienced and competent executives in the future to implement our growth plans. If we were to lose the services of any of our key management members and were unable to recruit and retain personnel with equivalent qualifications at any time, the management and growth of

our business could be adversely affected.

Competition for qualified personnel in general is intense in the PRC and other markets where we operate. We cannot guarantee that we will be able to maintain an adequate skilled labor force necessary for us to execute our projects or to perform other corporate activities, nor can we guarantee that staff costs will not increase as a result of a shortage in the supply of skilled personnel. If we fail to attract and retain personnel with suitable managerial, technical or marketing expertise or maintain an adequate labor force on a continuous basis, our business operations could be adversely affected and our future growth and expansions may be inhibited.

***We may not be able to detect and prevent fraud or other misconduct committed by our employees, representatives, agents, customers or other third parties.***

We may be exposed to fraud or other misconduct committed by our employees, representatives, agents, customers or other third parties that could subject us to litigation, financial losses and sanctions imposed by governmental authorities, as well as affect our reputation. These misconduct could include:

- \* hiding unauthorized or unsuccessful activities, resulting in unknown and unmanaged risks or losses;
- \* intentionally concealing material facts, or failing to perform necessary due diligence procedures designed to identify potential risks, which are material to us in deciding whether to make investments or dispose of assets;
- \* improperly using or disclosing confidential information;
- \* engaging in improper activities such as offering bribes to counterparties in return for any type of benefits or gains;
- \* misappropriation of funds;
- \* conducting transactions that exceed authorized limits;
- \* engaging in misrepresentation or fraudulent, deceptive or otherwise improper activities;
- \* engaging in unauthorized or excessive transactions to the detriment of our customers; or
- \* otherwise not complying with applicable laws or our internal policies and procedures.

Our internal control procedures are designed to monitor our operations and ensure overall compliance. However, such internal control procedures may be unable to identify all incidents of non-compliance or suspicious transactions in a timely manner if at all. Furthermore, it is not always possible to detect and prevent fraud and other misconduct, and the precautions we take to prevent and detect such activities may not be effective.

There is no assurance that fraud or other misconduct will not occur in the future. If such fraud or other misconduct does occur, it may cause negative publicity as a result, and could have a material and adverse effect on our business, financial condition and results of operations.

***Our operations are affected by a number of risks relating to conducting business in the PRC.***

As a significant majority of our assets and operations are located in the PRC, we are subject to a number of risks relating to conducting business in the PRC, including the following:

- \* The central and local PRC government continues to exercise a substantial degree of control and influence over the aluminum industry in China and shape the structure and development of the industry through the imposition of industry policies governing major project approvals, preferential tax treatment and safety, environmental and quality regulations. If the PRC government changes its current policies or the interpretation of those policies that are currently beneficial to us, we may face pressure on profit margins and significant constraints on our ability to expand our business operations.
- \* Although China has been transitioning from a planned economy to a market-oriented economy, a substantial portion of productive assets in China are still owned by the PRC government. The PRC government also exercises significant control over China's economic growth through the allocation of resources, control of payments of obligations denominated in foreign currencies and monetary and tax policies. Some of these measures benefit the overall economy of China, but may have a materially adverse impact on us.
- \* In 2005, China adopted a managed floating exchange rate system to allow the value of the Renminbi to fluctuate within a regulated band based on supply and demand with reference to a basket of currencies. Since then the exchange rate between U.S. dollar and Renminbi has fluctuated and become increasingly unpredictable following the global financial crisis with increasing pressure on the Renminbi to appreciate. In April 2012, the PRC government took a milestone step in turning the Renminbi into a global currency by doubling the size of its trading band against the U.S. dollar, pushing through a crucial reform that further liberalizes its financial markets. The People's Bank of China further allows the Renminbi to rise or fall 2% from a mid-point every day, effective on March 17, 2014, compared with its previous 1% limit. Any appreciation of the Renminbi will affect the value of our US dollar-denominated borrowings and overseas investments, increase the prices of our export sales denominated in foreign currencies and reduce the Renminbi equivalent value of our trade and notes receivable denominated in foreign currencies, which may adversely affect our financial condition and results of operations. Our financial condition and operating performance may also be affected by changes in the value of currencies other than Renminbi in which our earnings and obligations are denominated.
- \* Although the promulgation of laws and regulations covering general economic matters has increased since 1979, China has not developed an adequately comprehensive legal system and recently enacted laws and regulations may not sufficiently cover all aspects of economic activities in China. In particular, because these laws and regulations are relatively new, and because of the limited volume of published decisions and their lack of binding precedential nature, the interpretation and enforcement of these laws and regulations involve uncertainties. The system of laws and the enforcement of existing laws in the PRC may not be as certain in implementation and interpretation as in the United States. The PRC judiciary is relatively inexperienced in enforcing corporate and commercial law, leading to a higher than usual degree of uncertainty as to the outcome of any litigation. The inability to enforce or obtain a remedy under any of our present or future agreements could result in a significant loss of business, business opportunities or capital.



***The audit reports included in this annual report are prepared by auditors who are not inspected by the Public Company Accounting Oversight Board and, as such, you are deprived of the benefits of such inspection.***

Auditors of companies that are registered with the SEC and traded publicly in the United States, including our independent registered public accounting firms, must be registered with the US Public Company Accounting Oversight Board (United States) (the "PCAOB") and are required by the laws of the United States to undergo regular inspections by the PCAOB to assess their compliance with the laws of the United States and professional standards. Because we have substantial operations within the PRC and the PCAOB is currently unable to conduct inspections of the work of our auditors as they relate to those operations without the approval of the Chinese authorities, our auditors' work related to our operations in China is not currently inspected by the PCAOB.

This lack of PCAOB inspections of audit work performed in China prevents the PCAOB from regularly evaluating audit work of any auditor that was performed in China including that performed by our auditors. As a result, investors may be deprived of the full benefits of PCAOB inspections.

The inability of the PCAOB to conduct inspections of audit work performed in China makes it more difficult to evaluate the effectiveness of our auditors' audit procedures as compared to auditors in other jurisdictions that are subject to PCAOB inspections on all of their work. Investors may lose confidence in our reported financial information and procedures and the quality of our financial statements.

***Proceedings instituted recently by the SEC against five PRC-based accounting firms could result in our financial statements being determined to not be in compliance with the requirements of the Exchange Act.***

In December 2012, the SEC brought administrative proceedings against five accounting firms in China, alleging that they had refused to produce audit work papers and other documents related to certain other China-based companies under investigation by the SEC for potential accounting fraud. On January 22, 2014, an initial administrative law decision was issued, censuring these accounting firms and suspending four of the five firms from practicing before the SEC for a period of six months. The decision is neither final nor legally effective unless and until reviewed and approved by the SEC. The four firms which are subject to the six month suspension from practicing before the SEC have recently appealed the initial administrative law decision to the SEC. The sanction will not become effective until after a full appeal process is concluded and a final decision is issued by the SEC. The accounting firms can also further appeal the final decision of the SEC through the federal appellate courts. We were not and are not subject to any SEC investigations, nor are we involved in the proceedings brought by the SEC against the accounting firms. However, the independent registered public accounting firms that issue the audit reports included in our annual reports filed with the SEC is each affiliated to one of the four accounting firms subject to the six month suspension from practicing before the SEC in the initial administrative law decision and we may therefore be adversely affected by the outcome of the proceedings, along with other U.S.-listed companies audited by these accounting firms.

On May 24, 2013, the PCAOB announced that it had entered into a Memorandum of Understanding on Enforcement Cooperation with the CSRC and the Ministry of Finance of the PRC, which establishes a cooperative framework between the parties for the production and exchange of audit documents relevant to investigations in the United States and China. However, it is not clear how these recent developments could affect the SEC's final decision in the case against the five accounting firms or any subsequent appeal to courts that the accounting firms may initiate. Therefore, it is difficult to determine the final outcome of the administrative proceedings and the potential consequences thereof.

If our independent registered public accounting firm were denied, temporarily, the ability to practice before the SEC and we were unable to timely find another registered public accounting firm to audit and issue an opinion on our financial statements, our financial statements could be determined to not be in compliance with the requirements of the Exchange Act. Such a determination could ultimately lead to the delisting from the NYSE or deregistration from the SEC, or both, which would substantially reduce or effectively terminate the trading of our ADSs in the United

States.

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## **ITEM 4. INFORMATION ON THE COMPANY**

### **A. HISTORY AND DEVELOPMENT OF THE COMPANY**

We were incorporated as a joint stock limited company under the Company Law of the PRC on September 10, 2001 under the corporate name Aluminum Corporation of China Limited. Our principal executive and registered office is located in the People's Republic of China at No. 62 North Xizhimen Street, Haidian District, Beijing, China 100082, and our telephone number is (86) 10 8229 8560.

Pursuant to a reorganization agreement entered into among Chinalco, Guangxi Investment and Guizhou Development in 2001, substantially all of Chinalco's alumina and primary aluminum production operations, as well as a research institute and other related assets and liabilities, were transferred to us upon our formation. We acquired our bauxite mining operations and associated mining rights from Chinalco in a separate mining rights agreement.

We are a vertically integrated aluminum producer with operations in bauxite and coal mining, alumina refining and primary aluminum smelting. We also produce ancillary products and services derived from or related to our aluminum operations. In addition, we are engaged in trading of alumina, primary aluminum, aluminum fabrication products, other non-ferrous metal products, coal products and raw and ancillary materials in bulk domestically and internationally. Since 2013, we have expanded our operations into power generation.

We have substantially increased the size and scope of our operations through organic growth as well as selective acquisitions and joint ventures. Our key operating assets currently include six subsidiaries mainly engaged in bauxite mining; one integrated alumina and primary aluminum production plant; one integrated alumina, primary aluminum and aluminum fabrication plant; seven stand-alone alumina refineries, including our Research Institute; 12 stand-alone primary aluminum smelters, including our Research Institute; and one carbon production plant; and one integrated power generation company with coal mining operations. All of our principal production facilities are operated in accordance with ISO14001 standards.

#### **Significant Acquisitions and Joint Ventures**

On August 11, 2012 and August 13, 2012, we entered into an equity transfer agreements with each of China Zhongtou Trust Co., Ltd. and Bank of China Group Investment Limited for the acquisition of an aggregate of 35.3% of the equity interest in Ningxia Energy for a total consideration of approximately RMB674.9 million and an equivalent amount in HK dollars of approximately RMB1,347.7 million calculated on the benchmark exchange rate for HK dollars to RMB as announced by the PBOC on the payment date. On December 14, 2012, we submitted a bid in response to an open tender of Huadian Power International Corporation Limited for its 23.66% of the equity interest in Ningxia Energy announced on November 30, 2012. We won the bid on December 28, 2012 and entered into an equity transfer agreement with Huadian Power International Corporation Limited on December 31, 2012 to acquire 23.66% of the equity interest in Ningxia Energy for a total consideration of approximately RMB1,361.5 million. On December 31, 2012, we entered into a capital increase and share subscription agreement with Ningxia Energy and Ningxia State-owned Investment and Operation Limited Liability Company, Beijing Energy Investment (Holding) Co., Ltd. and Ningxia Power Investment Corporation. Ningxia Energy is an integrated power generation company with coal mines located in Ningxia Autonomous Region. Its principal business includes conventional coal-fire power generation and renewable energy generation. Pursuant to the capital increase and share subscription agreement, Ningxia Energy increased its registered capital by RMB1,452.66 million and we subscribed for all such

additional registered capital at an aggregate subscription price of RMB2 billion. We completed the acquisition and capital contribution in January 2013 and currently hold 70.82% of the equity interest in Ningxia Energy.

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### **Disposal of Aluminum Fabrication Business**

In line with our development strategy to focus on the upstream sectors of the aluminum industry chain and the production of high value added products, we disposed of substantially all of our aluminum fabrication operations to Chinalco pursuant to the approval of shareholders at the 2012 annual general meeting on June 27, 2013.

On May 13, 2013, we submitted the tender notice to CBEX to dispose of the equity interest we held in eight aluminum fabrication enterprises, including Henan Aluminum, Chalco Southwest Aluminum, Chalco Southwest Aluminum Cold Rolling, Huaxi Aluminum, Qingdao Light Metal, Chalco Ruimin, Chalco Sapa Aluminum Products (Chongqing) Co., Ltd. and Guizhou Chalco Aluminum Co., Ltd. (collectively, "Aluminum Fabrication Interests") through open tender. Chinalco participated in and won the bid for the Aluminum Fabrication Interests on June 7, 2013. We entered into an agreement (the "Aluminum Fabrication Interests Transfer Agreement") with Chinalco on June 9, 2013 for the disposal of Aluminum Fabrication Interests for a consideration of RMB3,242.2 million. Such consideration was the initial bidding price, which was determined with reference to the appraised value of the Aluminum Fabrication Interests. Pursuant to the Aluminum Fabrication Interests Transfer Agreement, Chinalco will pay the consideration in cash in two installments, namely, 30% of the consideration to be paid within five business days after the effective date of the agreement and 70% of the consideration to be paid by June 30, 2014. Chinalco must pay interest for the second installment for the period starting from the date immediately after the effective date until the payment date at the one-year lending rate set by the PBOC. The disposal was approved at the 2012 annual general meeting held on June 27, 2013 and we completed the disposal on June 27, 2013. As of the date of this annual report, Chinalco had paid the first installment in accordance with the Aluminum Fabrication Interests Transfer Agreement.

As a condition of the disposal of the Aluminum Fabrication Interests, on June 9, 2013, we entered into an agreement with Chinalco to transfer the outstanding entrusted loans we provided to Henan Aluminum and Qingdao Light Metal as of December 31, 2012 to Chinalco for a consideration of RMB1,756.0 million. Such consideration was determined based on negotiations between the parties, with reference to the appraised total value of the loans. Pursuant to the agreement, Chinalco will pay the consideration in cash in five equal instalments of RMB351.2 million, with the last installment, together with the relevant interests at the one-year lending rate set by the PBOC, to be paid by June 30, 2017. The transfer was approved at the 2012 annual general meeting held on June 27, 2013 and we completed the transfer on June 27, 2013. As of the date of this annual report, Chinalco had paid the first installment in accordance with the agreement.

In addition, we entered into an agreement with Northwest Aluminum Fabrication Plant, a subsidiary of Chinalco, on June 6, 2013 to dispose of all the assets of Northwest Aluminum for RMB1,659.6 million. Such consideration was determined based on negotiations between the parties, with reference to the appraised net asset value of Northwest Aluminum. Pursuant to the agreement, Northwest Aluminum Fabrication Plant will pay the consideration in cash in five equal instalments of RMB331.9 million, with the last installment, together with the relevant interests at the one-year lending rate set by the PBOC, to be paid by June 30, 2017. The disposal was approved at the 2012 annual general meeting held on June 27, 2013 and we completed the disposal on June 27, 2013. As of the date of this annual report, Northwest Aluminum Fabrication Plant had paid the first installment in accordance with the agreement.

### **Disposal of Assets of Alumina Production Line of Guizhou Branch**

On June 6, 2013, we entered into an agreement with Guizhou Aluminum Plant, a subsidiary of Chinalco, to dispose of the assets of alumina production line of our Guizhou branch for a consideration of RMB4,429.0 million. Such consideration was determined based on negotiations between the parties, with reference to the appraised net asset value of such alumina assets of our Guizhou branch. Pursuant to the agreement, Guizhou Aluminum Plant will pay the consideration in cash in five equal instalments of RMB885.8 million, with the last installment, together with the relevant interests at the one-year lending rate set by the PBOC, to be paid by June 30, 2017. The disposal was approved at the 2012 annual general meeting held on June 27, 2013 and we completed the disposal on June 27, 2013. As of the date of this annual report, Guizhou Aluminum Plant had paid the first installment in accordance with the agreement.

We decided to dispose of the assets of alumina production line of Guizhou branch because the district in which they are located has been changed from an industrial district to a commercial district based on the local urban plan, which will significantly increase Guizhou branch's environmental compliance costs. We plan to build a new alumina production line in an area relatively close to major bauxite and coal mines in Guizhou Province.

### **Construction Projects**

As of the date of this annual report, we have undertaken a number of facility expansion projects in China. See "- D. Property, Plants and Equipment - Our Expansion."

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### **Overseas Development**

On July 29, 2010, we entered into a joint development agreement with Rio Tinto and Rio Tinto Iron Ore Atlantic Limited, an affiliate of Rio Tinto, for the development and operation of the Simandou Project, a premium open-pit iron ore mine located in Guinea, West Africa. This agreement provides that we (via our subsidiary) would acquire 47% of the equity interest in a joint venture company to be incorporated by Rio Tinto for an earn-in payment of US\$1.35 billion, and Rio Tinto would transfer its entire 95% of the equity interest in its project company for the Simandou Project, Simfer S.A., to the joint venture company. On April 22, 2011, Rio Tinto Mining & Exploration Limited, a wholly-owned subsidiary of Rio Tinto, Simfer S.A. and the Government of Guinea entered into a settlement agreement, which, amongst other things, provided that the Government of Guinea would be entitled to acquire up to 35% of the equity interest in Simfer S.A. On November 28, 2011, we, through Chalco Hong Kong, established Chalco Iron Ore under the laws of Hong Kong with the China-Africa Development Fund and three leading PRC enterprises in the steel, port building and railway construction industries to serve as an investment vehicle for investing in the Simandou Project. We, through Chalco Hong Kong, hold 65% and the other investors collectively hold 35% of the equity interest in Chalco Iron Ore. Following the approvals of the relevant PRC authorities in March and April 2012, Chalco Hong Kong contributed approximately US\$878 million to Chalco Iron Ore, representing 65% of the US\$1.35 billion earn-in to be paid by Chalco Iron Ore to Simfer Jersey Limited, the joint venture company incorporated by Rio Tinto under the laws of Jersey to implement the joint development agreement, as amended. On April 24, 2012, Chalco Iron Ore paid in full the total earn-in payment of US\$1.35 billion to Rio Tinto and acquired its 47% equity interest in Simfer Jersey Limited. Simfer Jersey Limited currently holds 95% of the equity interest in Simfer S.A., with the remaining 5% being held by International Finance Corporation. In addition, during the period from May 2012 to the end of 2013, Chalco Iron Ore injected approximately US\$561.5 million in the form of capital contribution based on its proportion of equity interest to Simfer Jersey Limited for the development and operation of the Simandou Project pursuant to the joint development agreement, as amended. Meanwhile, the other shareholder of Simfer Jersey Limited also injected the capital contribution based on its

proportion of equity interest to Simfer Jersey Limited. On October 18, 2013, we entered into a share purchase agreement with Chinalco and its wholly-owned subsidiary, Aluminum Corporation of Chinalco Overseas Holdings Limited ("Chinalco Overseas Holdings"), to dispose of 65% of the equity interest in Chalco Iron Ore and transfer outstanding bank loans provided by China Development Bank Corporation ("CDB") to Chinalco Overseas Holdings for a consideration of US\$2,066.5 million (the "Equity Consideration") and US\$438.8 million (the "Loan Consideration"), respectively. The bank loans were used for Chalco Hong Kong's capital contribution in Chalco Iron Ore. The Equity Consideration was determined with reference to 65% of the appraised net asset of Chalco Iron Ore and the Loan Consideration was determined based on the principal amount of such outstanding bank loans as shown in the financial statements of Chalco Hong Kong. We believe that such disposal will enable us to focus on the development of our core business of alumina and primary aluminum operations, where we have established leading market positions, and to reduce future capital expenditures on iron ore development and to improve asset-to-debt ratio and generate expected cash flows. Pursuant to the agreement, in the event that we obtain the consent from CDB on the transfer of the bank loans, Chinalco will pay the Equity Consideration in five installments, namely, US\$438.8 million (which will be net off by the Loan Consideration), US\$387.9 million, US\$413.3 million, US\$413.3 million and US\$413.3 million, with the last installment, together with the relevant interests at the London Interbank Offered Rate plus 0.9%, to be paid by December 31, 2017. In the event that we could not obtain the consent from CDB on the transfer of the bank loan, Chinalco will pay the Equity Consideration in five equal instalments of RMB413.3 million, with the last installment, together with the relevant interests at the London Interbank Offered Rate plus 0.9%, to be paid by December 31, 2017. The transactions were approved at the 2013 second extraordinary general meeting held on November 29, 2013. We obtained the consent from Rio Tinto relating to such disposal on December 19, 2013. We completed the transactions on December 26, 2013. Whether we can obtain consent from CDB on the transfer of the bank loans will not impact the completion of the equity transfer. As of the date of this annual report, we had not obtained the consent from CDB and Chinalco had not paid the first installment of Equity Consideration.

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### **Proposed Private Placement of A Shares**

On March 8, 2012, our Board resolved to issue up to 1.25 billion A Shares in the PRC. The A Share issue plans previously proposed by our Board on June 30, 2009 and January 30, 2011 and approved by our shareholders at the extraordinary general meeting, A Share class meeting and H Share class meeting held on August 24, 2009 and on April 14, 2011, respectively, ceased. Pursuant to the new issue plan approved by our Board on March 8, 2012, we will issue up to 1.25 billion A Shares, with a nominal value of RMB1.00 each, by way of private placement for expected proceeds of not exceeding RMB8 billion. We will issue the A Shares to no more than ten specific target subscribers within six months from obtaining the approval of the CSRC. The issue price of A Shares to be offered will be not less than 90% of the average trading price of our A Shares in twenty trading days immediately preceding the pricing determination date. We intend to apply proceeds from this private placement to finance Chalco Xing Xian alumina project, Chalco Zhongzhou Ore-dressing Bayer Process expansion construction project and to supplement working capital. The issue plan was approved by the SASAC on April 5, 2012 and by our shareholders at the extraordinary general meeting, A Share class meeting and H Share class meeting held on May 4, 2012. On August 24, 2012, our Board resolved to adjust the issue plan by proposing, among others, to increase the number of A Shares to be issued to up to 1.45 billion A Shares. The adjusted issue plan was approved by the SASAC and our shareholders at an extraordinary general meeting, A Share class meeting and the H Share class meeting on October 12, 2012 and by the CSRC on December 7, 2012. On March 14, 2013, we obtained the approval from the CSRC on our proposed private placement of A Shares under such adjusted issue plan, with effective period of six months after the approval date. However, the CSRC temporarily revoked its approval in July 2013 due to its on-going investigation on the sponsor of our proposed private placement of A Shares. As of the date of this annual report, the Company has not

issued any A Shares under the issue plan.

### **Proposed Issuance of H Shares**

On June 27, 2013, our shareholders at the 2012 annual general meeting passed a special resolution, which is valid until the earliest of (i) the end of 12 months from the date of passage, (ii) the conclusion of our next annual general meeting or (iii) the date on which the authority set out in this resolution is revoked or varied by a special resolution at a general meeting. The resolution authorizes us to issue up to 20% of the total nominal value of H Shares in issue as of the resolution date. Our Board is authorized to determine the use of the proceeds. The proposed issuance is subject to the approval by the CSRC and/or other relevant PRC government authorities.

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### **Senior Perpetual Capital Securities Offering**

In October 2013, we completed the issuance of US\$350 million in aggregate principal amount of 6.625% senior perpetual capital securities (the "Securities") through Chalco Hong Kong Investment Company Limited (the "Issuer"), our wholly-owned subsidiary, which was exempted from, and not subject to, registration under the Securities Act. The Securities are guaranteed by seven of our subsidiaries including Chalco HongKong Limited. The Securities also have the benefit of a keepwell deed dated October 29, 2013 entered into by the Issuer, the Company, Chalco HongKong Limited and the trustee and a deed of equity interest purchase undertaking dated on October 29, 2013 entered into by the Company and the trustee, both deeds being executed in favor of the trustee. The Securities were listed on the Hong Kong Stock Exchange on October 30, 2013. The net proceeds from the issue of the Securities has been on-lent to the Company or any of its subsidiaries for general corporate use.

## **B. BUSINESS OVERVIEW**

### **Our Principal Products**

We are the largest producer of alumina and primary aluminum in China in terms of production volume. We have benefited from the strong growth of the PRC aluminum market, one of the world's fastest growing major aluminum markets. We refine bauxite into alumina, which is then smelted into primary aluminum. In addition to alumina and primary aluminum, we also produce and sell a relatively small amount of alumina chemical products (alumina hydrate and alumina-based industrial chemical products), carbon products (carbon anodes and cathodes) and gallium. We are also engaged in the trading of alumina, primary aluminum, aluminum fabrication products, other non-ferrous metal products, coal products and raw and ancillary materials in bulk both manufactured by us and sourced from external suppliers domestically and abroad. In addition, we are engaged in coal mining and power generation. The remainder of our revenues were derived from research and development activities and other products and services. Accordingly, we organize and manage our operations in five business segments: alumina segment, primary aluminum segment, trading segment, energy segment and corporate and other operating segment. After elimination of inter-segment sales, revenues attributable to our alumina segment, primary aluminum segment, trading segment, energy segment and corporate and other operating segment accounted for approximately 4.0%, 18.8%, 73.9%, 2.9% and 0.4%, respectively, of our total revenues from continuing operations in 2013.

Our alumina segment includes the mining and purchasing of bauxite and other raw materials, and production and sale of alumina as well as alumina-related products, such as alumina hydrate, alumina-based chemical products and gallium. Alumina accounted for approximately 92.3% of the total production volume for this segment in 2013. Alumina chemical products are used in the production of chemical, pharmaceutical, ceramic and construction materials. In the process of refining bauxite into alumina, we produce a small amount of gallium as a by-product. Gallium is a rare, high value metal with applications in the electronics and telecommunication industries.

Our primary aluminum segment includes the production and sale of primary aluminum and aluminum-related products, such as carbon products. Our principal primary aluminum products are ingots and molten aluminum, which, in the aggregate, accounted for approximately 82.6% of our total production volume of primary aluminum in 2013. Our standard 20 kilogram remelt ingots are used for general aluminum fabrication in the construction, power generation, automobile, packaging, machinery and durable goods industries. We internally produce substantially all the carbon products used at our smelters and sell our remaining carbon products to external customers.

Our trading segment includes sales of alumina, primary aluminum, aluminum fabrication products, other non-ferrous metal products, coal products and raw and ancillary materials in bulk both manufactured by us and sourced from external suppliers domestically and abroad. We established our trading business as a separate segment in July 2010 as a result of the implementation of our operational structural exercise.

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Our energy segment includes coal mining and power generation, including conventional coal-fire power generation and renewable energy generation such as wind power and photovoltaic power. We established our energy segment in January 2013 as a result of our acquisition of Ningxia Energy in line with our development strategy to partially offset our future energy costs and secure a portion of the coal we consume in our operations. In 2013, we sold most of the electricity we generated to regional power grids at government-mandated rates, supplied a portion of the coal output to our own electric power plant and primary aluminum smelter and sold the remaining portion to external customers, including power generation enterprises and cement plants.

Our corporate and other operating segment mainly includes management of headquarters, research and development activities.

We used to be engaged in aluminum fabrication operations, where we process primary aluminum for the production and sales of various aluminum fabrication products, including casts, planks, strips, screens, extrusions, ingots and profiles. As approved at our 2012 annual general meeting held on June 27, 2013, we disposed of substantially all of our aluminum fabrication operations to Chinalco in line with our development strategy to focus on the upstream sectors of the aluminum industry chain and the production of high value added products. As a result, we ceased to have our aluminum fabrication business as a separate segment in June 2013.

### **Our Production Capacity**

As of December 31, 2013, our annual alumina and primary aluminum production capacity was approximately 14.7 million tonnes and 3.8 million tonnes, respectively. The following table sets forth the production capacity of each of our principal plants by business segment as of the indicated date:

<b>Plant</b>	<b>As of December 31, 2013</b>		
	<b>Alumina</b>	<b>Primary Aluminum</b>	<b>Aluminum Fabrication</b>

			<b>Products<sup>(1)</sup></b>
	<i>(in thousand tonnes)<sup>(2)</sup></i>		
Guangxi branch	2,210.0	139.5	-
Zhongzhou branch	2,980.0	-	-
Qinghai branch	-	367.0	-
Shanxi branch	2,747.0	-	-
Guizhou branch	-	403.7	-
Henan branch	2,410.0	-	-
Shandong branch	1,770.0	55.0	10.0
Zunyi Alumina	1,000.0	-	-
Chongqing branch	800.0	-	-
Shanxi Huaxing	800.0	-	-
Shanxi Huaze	-	350.0	-
Lanzhou branch	-	388.0	-
Shanxi Huasheng	-	220.0	-
Fushun Aluminum	-	330.0	-
Zunyi Aluminum	-	235.0	-
Shandong Huayu	-	200.0	-
Gansu Hualu	-	230.0	-
Baotou Aluminum	-	388.0	-
Research Institute	20.0	18.0	-
Liancheng branch	-	523.0	-
Longmen Aluminum	-	-	-
Chalco Nanhai	-	-	110.0
	-	-	-
<b>Total</b>	<b>14,737.0</b>	<b>3,847.2</b>	<b>120.0</b>

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(1) We disposed of substantially all of our aluminum fabrication operations in June 2013. As a result, we ceased to have our aluminum fabrication business as a separate segment in June 2013.

(2) Production capacity is calculated based on designed capacity, which accounts for various assumptions including downtime for ordinary maintenance and repairs, the ore grade of bauxite feedstock and subsequent capacity modifications.

In 2013, we produced approximately 12.1 million tonnes of alumina and 3.8 million tonnes of primary aluminum. Our production of alumina and primary aluminum represented approximately 24.8% and 15.4%, respectively, of the total output in China in 2013.

The following table sets forth a breakdown of our production volume by product segment for the periods indicated:

**Year Ended December 31,**



<b>Production Volume by Product</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
	<i>(in thousand tonnes, except Gallium)</i>		
<b><i>Alumina segment</i></b>			
Alumina	11,021.0	11,934.0	12,143.2
Alumina chemical products	1,192.0	1,312.0	1,717.2
Gallium (in tonnes)	35.9	39.2	127.8
<b><i>Primary aluminum segment</i></b>			
Primary aluminum <sup>(1)</sup>	3,915.0	4,219.0	3,841.8
Carbon	1,906.0	1,957.2	2,010.4
<b><i>Aluminum fabrication<sup>(2)</sup></i></b>			
Aluminum fabrication products	662.0	622.9	290.0

(1) Including ingots, molten aluminum and other primary aluminum products.

(2) We disposed of substantially all of our aluminum fabrication operations in June 2013. As a result, we ceased to have our aluminum fabrication business as a separate segment.

## **Production Process**

### ***Alumina***

Alumina is refined from bauxite, an aluminum-bearing ore, through a chemical refining process. The refining process applied is determined by the mineral composition of the bauxite used in production. Our refineries may employ the Bayer process, the Bayer-sintering series process, the Bayer-sintering combined process or the ore-dressing Bayer process. Most of the bauxite reserves in China contain diasporic bauxite, which contains high alumina content and relatively high silica content, resulting in bauxite reserves with low alumina-to-silica ratio. The Bayer process cannot efficiently refine diasporic bauxite that has not undergone processing to increase its alumina-to-silica ratio. The sintering process or the Bayer-sintering combined process is suitable for refining low alumina-to-silica ratio bauxite. We have developed and improved these processes to increase our refining yield. When we refine alumina using the Bayer process, we produce gallium as a by-product, which undergoes further processing before sale. In the process of refining alumina, we also produce a relatively small amount of alumina chemical products (alumina hydrate and alumina-based industrial chemical products).

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### ***Primary Aluminum***

We smelt alumina into primary aluminum through electrolytic reduction. The electrolytic process takes place in a reduction cell, or pot, a steel shell lined with carbon cathodes and refractory materials. Powerful electric currents are passed through the pot to produce molten aluminum. The molten aluminum is transferred to holding furnaces and then poured directly into molds to produce foundry ingots, or further refined to form fabricating ingots, which may be used directly in the aluminum fabrication process. Most of the primary aluminum we produce is in the form of ingots.

All of our primary aluminum smelters use pre-bake anode reduction pot-lines. In the pre-bake reduction process, the

anodes are pre-formed in a separate facility where pollutants can be contained. The cells themselves are enclosed with removable panels so that waste gas produced during the process can be extracted using large exhaust fans. Our waste gas is treated and purified to reduce dust and fluoride emissions to acceptable levels set by state environmental protection agencies.

## Production Facilities

### Alumina

We currently operate eight alumina refineries and one research institute with a total designed annual production capacity of approximately 14.7 million tonnes as of December 31, 2013. Two of our refineries are integrated with primary aluminum smelters. In 2013, we produced approximately 12.1 million tonnes of alumina, approximately 1.7 million tonnes of alumina chemical products and approximately 127.8 tonnes of gallium. The overall utilization rate for our refineries was 85.1% in 2013. In 2013, we supplied approximately 7.2 million tonnes, or 59.6% of our total production, of alumina to our own smelters and sold the remaining alumina to other domestic smelters. All of the alumina chemical products that we produced in 2013 were sold by alumina refineries directly to external customers or internally to Chalco Trading for subsequent external trading. Zunyi Alumina completed its remoulding and upgrading project in 2013, which increased our total annual alumina production capacity by 200,000 tonnes. We completed our Chalco Xing Xian alumina project in 2013, which increased our annual alumina production capacity by 800,000 tonnes. In 2013, we disposed of the assets of alumina production line of Guizhou branch to a subsidiary of Chinalco, which decreased our annual alumina production capacity by 1.2 million tonnes.

The following table sets forth the annual production capacity, output of alumina and alumina chemical products, utilization rate of and production process applied in each of our alumina refineries and our Research Institute.

	As of December 31, 2013		For the Year Ended December 31, 2013		
	Annual Production Capacity <sup>(1)</sup>	Utilization Rate <sup>(2)</sup>	Alumina Production Output	Alumina Chemical Products Output	Production Process
	<i>(in thousand tonnes, except percentages)</i>				
Shanxi branch	2,747.0	100%	2,249.9	13.0	Bayer-sintering
Henan branch	2,410.0	74.3%	1,982.8	219.4	Bayer-sintering
Shandong branch	1,770.0	68.1%	1,535.2	973.7	Sintering and Bayer
Guizhou branch <sup>(3)</sup>	-	-	516.7	16.6	Bayer-sintering
Zhongzhou branch	2,980.0	73.8%	1,982.6	240.0	Sintering and Bayer
Guangxi branch	2,210.0	100%	2,403.1	196.5	Bayer
Zunyi Alumina	1,000.0	100%	978.1	2.4	Bayer
Chongqing branch	800.0	50.0%	464.8	7.0	Bayer-sintering Series
Shanxi Huaxing Research Institute <sup>(5)</sup>	800.0 20.0	-(4) -	30.0 -	- 48.6	Bayer Bayer
<b>Total</b>	<b>14,737.0</b>	<b>85.1%</b>	<b>12,143.2</b>	<b>1,717.2</b>	

(1) Production capacity is calculated based on designed capacity, which accounts for various assumptions including downtime for ordinary maintenance and repairs, the ore grade of bauxite feedstock and subsequent capacity modifications.

(2) Capacity utilization rate is calculated by dividing our utilized production capacity by our total designed production capacity.

(3) We disposed of the assets of alumina production line of our Guizhou branch in June 2013. Guizhou branch's production volume represents its production of alumina and alumina chemical products before such disposal.

(4) Shanxi Huaxing commenced trial production in October 2013 and commenced commercial production of some of its production facilities in December 2013.

(5) The alumina chemical products produced at our Research Institute are sold commercially, and such sales are included in our total revenues.

### ***Primary Aluminum***

We operate 14 primary aluminum smelters located across nine provinces in China, including our Research Institute, which produces a limited amount of primary aluminum in connection with its research and development activities. Our smelters had an aggregate annual production capacity of approximately 3.8 million tonnes as of December 31, 2013. Two of our smelters are integrated with alumina refineries and do not need to source alumina externally.

In 2013, we produced approximately 3.8 million tonnes of primary aluminum and the average utilization rate for our smelters decreased from 98.7% in 2012 to 87.5% in 2013, because we suspended the operations of certain primary aluminum production facilities in our Shandong branch, Guizhou branch, Zunyi Aluminum, Guangxi branch and Research Institute with an aggregate annual designed production capacity of 380,000 tonnes since June 2013, considering the sustained weak primary aluminum pricing environment and continued deterioration in primary aluminum price in 2013 which could not be offset through decreases in our costs. We ceased the operation of our obsolete primary aluminum production facilities of Longmen Aluminum in March 2012, which reduced our annual primary aluminum production capacity by 170,000 tonnes. We ceased the operation of our obsolete primary aluminum production facilities of Henan branch in January 2013, which reduced our annual primary aluminum production capacity by 56,000 tonnes. In April 2013, Jiaozuo Wanfang issued an additional 169,266,914 A shares through a private offering to independent third parties, as a result of which our shareholding in Jiaozuo Wanfang decreased from 24.002% to 17.75% and we lost control over Jiaozuo Wanfang. Accordingly, we ceased to include Jiaozuo Wanfang in our consolidated financial statements on April 19, 2013. Baotou Aluminum is currently undergoing remoulding and upgrading, which we expect will be completed by the end of 2014 and will increase our total annual primary aluminum production capacity by 150,000 tonnes. The following table sets forth the annual production capacity, aluminum output, utilization rate and smelting equipment used in each of our aluminum smelters and our Research Institute:

**As of December 31, 2013**

**For the Year Ended December 31,  
2013**

Plant	Annual Production Capacity <sup>(1)</sup>	Utilization Rate <sup>(2)</sup>	Aluminum Output	Smelting Equipment
<i>(in thousand tonnes, except percentages)</i>				
Baotou Aluminum	388.0	99.3%	366.3	200Ka, 240Ka and 400Ka pre-bake
Fushun Aluminum	330.0	92.8%	305.1	200Ka and 350Ka pre-bake
Gansu Hualu	230.0	95.2%	214.3	160Ka and 210Ka pre-bake
Guangxi branch	139.5	79.9%	126.5	160Ka and 320Ka pre-bake
Guizhou branch	403.7	55.1%	339.9	160Ka, 186Ka and 230Ka pre-bake
Henan branch <sup>(3)</sup>	-	-	-	-
Jiaozuo Wanfang <sup>(4)</sup>	-	-	143.1	280Ka pre-bake
Lanzhou branch	388.0	94.6%	359.4	200Ka and 350Ka pre-bake
Qinghai branch	367.0	96.5%	386.7	160Ka and 200Ka pre-bake
Research Institute <sup>(5)</sup>	18.0	-	-	150Ka and 300Ka pre-bake
Shandong Huayu	200.0	99.7%	221.7	240Ka pre-bake
Shandong branch <sup>(6)</sup>	55.0	-	35.0	200Ka pre-bake
Shanxi Huasheng	220.0	100%	223.2	300Ka pre-bake
Shanxi Huaze	350.0	99.8%	356.6	300Ka pre-bake
Zunyi Aluminum	235.0	45.9%	227.5	200Ka and 350Ka pre-bake
Liancheng branch	523.0	100%	536.5	200Ka and 500Ka pre-bake
Longmen Aluminum <sup>(7)</sup>	-	-	-	-
<b>Total</b>	<b>3,847.2<sup>(8)</sup></b>	<b>87.5%</b>	<b>3,841.8</b>	

(1) Production capacity takes into account designed capacity, downtime for ordinary maintenance and repairs and subsequent capacity modifications.

(2) Capacity utilization rate is calculated by dividing our utilized production capacity by our total designed production capacity.

(3)

We ceased the operation of our obsolete primary aluminum production facilities of Henan branch in January 2013.

- (4) Jiaozuo Wanfang completed a private offering of its A shares in April 2013, as a result of which we lost control over Jiaozuo Wanfang. Accordingly, we ceased to include Jiaozuo Wanfang in our consolidated financial statements on April 19, 2013. Jiaozuo Wanfang's production volume represents its production of primary aluminum before such dilution.
- (5) The primary aluminum produced at our Research Institute is sold commercially, and such sales are included in our total revenues.
- (6) We suspended the operations of primary aluminum production facilities in our Shandong branch since June 2013.
- (7) We ceased the operation of our obsolete primary aluminum production facilities of Longmen Aluminum in March 2012.
- (8) Not including the aluminum alloy business of Pingguo Aluminum.

## **Raw Materials**

### *Alumina*

Bauxite is the principal raw material in alumina production. Most of the bauxite in China is  $AL_2O_3 \cdot H_2O$  mineral. Bauxite deposits have been discovered across a broad area of central China and are especially abundant in the southern and northern parts of central China. The largest bauxite deposit in China lies in Shanxi Province.

*Rock Formation and Mineralization.* The bauxite deposits of our mines in China, except those of Guangxi Pingguo mine which is an accumulation deposit due to original erosion, usually have similar stratigraphical sequences. Primary bauxite deposit, as a type of sedimentary  $AL_2O_3 \cdot H_2O$  of Carboniferous or Permian age, is contained in clay rock, limestone or coal seams. A zony red shale is usually located at the bottom of the bauxite and the red seam distributes over the irregular "karst-type" erosion face on the top of Ordovician limestone. Aluminum deposits in northern China are usually covered with a very thick Quaternary weathering.

The thickness and quality of deposits vary with our mine locations. Quality is usually consistent in smooth sections but changes sharply in karst "billabong" terrain. The level of hardness of minerals also varies. A sequence that includes a seam of hard bauxite of fine quality in the middle and soft bauxite of inferior quality on the bottom and top seams is common in deposits.

Generally, deposits are horizontal or with an obliquity of 0 to 8 degrees, but there are also steep deposits at an angle of 75 degrees, such as the Guizhou No. 2 mine. Most of the original mineralization is not influenced by folds and faults, and some fractures of a low obliquity and folds emerge in certain deposits, which is evident in the Guizhou No. 2 mine area where the underground mining method must be used due to the obliquity of its bauxite body reaching 70 degrees with the influence of folds and several meters of dislocation arising from partial faults.

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*Economic Significance.* Our bauxite deposits in China are divided into three groups. They are primarily distinguished by drill hole spacing and the composition of the deposit, which can encompass rock formations such as intercalated clays, bauxite, footwall iron clay or Ordovician limestone. Bauxite deposit groups vary in the thickness and mineral

quality of its reserves.

We use the Chinese bauxite deposit estimation method, which is calculated using cutoff grades and thickness to outline continuous areas within the limits defined by samples of marginal grade. We utilize actual limiting sample points that are joined to create a polygonal outline, and grades are then calculated using a length weighted arithmetic average. The Chinese program of systematic and accurate method of test boring, inspection pit, trial trench, density, tonnage analysis and calculation applied to the geological work of bauxite in China is an appropriate method to analyze these types of deposits.

*Supply.* To support the growth of our alumina production, we continuously seek opportunities to streamline and optimize our bauxite procurement, including the ongoing restructuring of our joint mining operators and acquisition of overseas bauxite resources. Except for our Shandong branch, all of our refineries are located in the four provinces where over 90% of China's potentially mineable bauxite has been found. We generally source our bauxite from mines close to our refineries to control transportation costs. Historically, we have procured our bauxite supply principally from three sources:

- our own bauxite mining operations;
- jointly-operated mines; and
- other suppliers, which principally include small independent mines in China and, to a lesser extent, international suppliers.

On average, our refineries consume approximately 2.3 tonnes of bauxite to produce one tonne of alumina in 2013. We used approximately 27.7 million tonnes, 29.8 million tonnes and 27.8 million tonnes of bauxite in our alumina production in 2011, 2012 and 2013, respectively. The production of our own mines was approximately 17.1 million tonnes in 2013, comprising approximately 16.2 million tonnes from our own mines in China and 890,000 tonnes from our own mines in Indonesia. Our jointly-operated mine did not produce bauxite in 2012 and 2013. We purchase bauxite from a number of suppliers and do not depend on any supplier for our bauxite requirements. In 2013, bauxite secured from other suppliers accounted for approximately 51.0% of our total bauxite supply, primarily because our demand for bauxite exceeded the production of our own mines.

The following table sets forth the volumes and percentages of bauxite supplied by our own mines, jointly-operated mines and other suppliers for the periods indicated:

	<b>Year Ended December 31,</b>					
	<b>2011</b>		<b>2012</b>		<b>2013</b>	
	<b>Bauxite Supply</b>	<b>Percentage of Bauxite Supply (%)</b>	<b>Bauxite Supply</b>	<b>Percentage of Bauxite Supply (%)</b>	<b>Bauxite Supply</b>	<b>Percentage of Bauxite Supply (%)</b>
	<i>(in thousand tonnes, except percentages)</i>					
Own mines	13,564.6	48.8	17,262.0	50.8	17,130.2	49.0
Jointly-operated mines	4.3	-	-	-	-	-
Other suppliers	14,209.5	51.2	16,689.0	49.2	17,861.1	51.0
<b>Total</b>	<b>27,778.4</b>	<b>100.0</b>	<b>33,951.0</b>	<b>100.0</b>	<b>34,991.3</b>	<b>100.0</b>

*Own Mines.* As of December 31, 2013, we owned and operated 19 mines in China that had approximately 271.1 million tonnes of aggregate bauxite reserves and we continue to explore new bauxite reserves to replenish our reserves. We also own and operate a bauxite mine in Laos through Lao Service Mining, in which we held 60% of the equity interest. In April 2013, we completed the acquisition of 70% of the equity interest in PT Nusapati Prima, which holds mining permit or exploration permit for seven bauxite mines in West Kalimantan, Indonesia. Our bauxite deposits in Indonesia are lateritic gibbsite and were formed by weathering and leaching of aluminum-rich silicate rock in tropical climates. We use low temperature Bayer process to refine alumina from our bauxite deposits in Indonesia, which results in relatively low energy consumption and high dissolution rate.

As none of our mines produces bauxite for external sales, we have full access to the bauxite produced by our own mines. For the three years ended December 31, 2011, 2012 and 2013, we extracted approximately 13.6 million tonnes, 17.3 million tonnes and 17.1 million tonnes, respectively, of bauxite from our own mines. In order to retain the title to our mines, or obtain the title to new mines in China, we are required to comply with mining qualifications approved by the relevant PRC authorities and pay an annual fee equivalent to RMB1,000 per km<sup>2</sup> for our mines.

Our reported bauxite reserves for our own mines in China do not exceed the quantities that we estimate could be extracted economically if future prices were at similar levels to average historical prices for traded metals for the years ended December 31, 2011, 2012 and 2013, or the three year historical contracted prices for bulk commodities. However, we do not use the three year historical bauxite or aluminum price to determine bauxite reserves, nor did we utilize any currency conversion factors or pricing related mechanisms. Instead, the primary criteria are the specifications required by our aluminum refineries, as well as certain modifying factors that are dependent on reserve quality.

The following table sets forth information for our own mines as of December 31, 2013:

Mine	Location	Nature of Ownership <sup>(1)</sup>	Mining Method	Permit Renewal <sup>(1)</sup>	Present Condition / Current State of Exploration	Bauxite Production (in thousand tonnes)
Pingguo mine	Guangxi Zhuang Autonomous Zone, China	100% owned and operated by Chalco	Open pit	October 2030 - April 2036	Fully developed and operational	6,130
Guizhou mine <sup>(2)</sup>	Guizhou Province, China	100% owned and operated by Chalco	Open pit / underground	September 2016 - December 2038	Fully developed and operational	1,080
Zunyi mine	Guizhou Province, China	100% owned and operated by Chalco	Open pit / underground	August 2017 - May 2021	Two stopes are currently under development	400
Xiaoyi mine	Shanxi Province, China	100% owned and operated by Chalco	Open pit	August 2015 - September 2031	Fully developed and operational	3,573
Shanxi Other Mines	Shanxi Province, China	100% owned and operated by Chalco	Open pit / underground	June 2014 - May 2018	Fully developed and operational or under	1,767

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Mianchi mine	Henan Province, China	100% owned and operated by Chalco	Open pit / underground	February 2015 - October 2031	development <sup>(5)</sup> Three stopes are currently under development	413
Luoyang mine	Henan Province, China	100% owned and operated by Chalco	Open pit / underground	October 2013 <sup>(6)</sup> - October 2031	Fully developed and operational	713
Xiaoguan mine <sup>(3)</sup>	Henan Province, China	100% owned and operated by Chalco	Open pit / underground	February 2015 - October 2031	Fully developed and operational	806
Gongyi mine	Henan Province, China	100% owned and operated by Chalco	Open pit / underground	November 2013 <sup>(6)</sup> - April 2029	Fully developed and operational	879
Dengfeng mine	Henan Province, China	100% owned and operated by Chalco	Open pit / underground	June 2014 - June 2019	Fully developed and operational	191
Xinmi mine <sup>(3)</sup>	Henan Province, China	100% owned and operated by Chalco	Open pit / underground	July 2014 - July 2020	Fully developed and operational	-
Sanmenxia mine	Henan Province, China	100% owned and operated by Chalco	Underground	April 2015 - January 2026	Under construction	71
Xuchang mine	Henan Province, China	100% owned and operated by Chalco	Open pit / underground	January 2015 - March 2016	Fully developed and operational	130
Jiaozuo mine	Henan Province, China	100% owned and operated by Chalco	Open pit / underground	September 2014 - February 2022	Fully developed and operational	202
Pingdingshan mine	Henan Province, China	100% owned and operated by Chalco	Open pit / underground	January 2014 <sup>(6)</sup> - September 2021	Fully developed and operational	698
Yangquan mine	Shanxi Province, China	100% owned and operated by Chalco	Open pit	June 2014 - September 2031	Fully developed and operational	200
Nanchuan mine	Chongqing Municipality, China	100% owned and operated by Chalco	Underground	November 2016 - December 2022	Fully developed and operational	990
Huaxing mine <sup>(4)</sup>	Shanxi Province, China	100% owned and operated by Chalco	Underground	August 2018	Fully developed and operational	760
PT ALUSENTOSA	West Kalimantan, Indonesia	Owned and operated by PT NusapatiPrima, a 70% subsidiary of Chalco	Open pit	December 2027	In production	581
PT KALMINSENTOSA	West Kalimantan, Indonesia	Owned and operated by PT NusapatiPrima, a 70% subsidiary of Chalco	Open pit	November 2013	Under exploration	-
PT KALMIN	West Kalimantan, Indonesia	Owned and operated by PT NusapatiPrima, a 70% subsidiary of Chalco	Open pit	December 2027	In production	377
PT VISITAMA	West Kalimantan, Indonesia	Owned and operated by PT NusapatiPrima, a 70% subsidiary of Chalco	Open pit	December 2015	Under exploration	-
PT KALMIN LESTARI	West Kalimantan, Indonesia	Owned and operated by PT NusapatiPrima, a 70% subsidiary of Chalco	Open pit	November 2013	Under exploration	-
PT ADITAMA LESTARI	West Kalimantan, Indonesia	Owned and operated by PT NusapatiPrima, a 70% subsidiary of Chalco	Open pit	July 2015	Under exploration	-
PT KALMINADIMAKMUR	West Kalimantan, Indonesia	Owned and operated by PT NusapatiPrima, a 70% subsidiary of Chalco	Open pit	July 2015	Under exploration	-
Laos bauxite mine	Attapeu Province and Sekong Province, Laos	Owned and operated by Laos Mineral Services Co., Ltd., a 60% subsidiary of Chalco	Open pit	August 2013 <sup>(7)</sup> - November 2014	Under exploration	-



(1) All conditions to retain our properties or leases have been fulfilled as of December 31, 2013. Each mine may be covered by one or more mining permits or exploration permits and the range of permit renewal dates is set forth above.

(2) Including Guizhou No. 1 mine and Guizhou No. 2 mine.

(3) In 2013, Xiaoguan mine was divided into two mines, namely, Xiaoguan mine and Xinmi mine.

(4) Shanxi Huaxing obtained its mining permit in August 2013.

(5) Three mining areas of Shanxi Other Mines are under development and four mining areas are fully developed and operational and one mining area ceased production in 2008.

(6) We are in the process of renewing these permits.

(7) We are in the process of renewing the exploration permits for two mining areas.

We are required to obtain mining rights permits to conduct mining activities. Under PRC laws and regulations, a mine owner must prepare and submit exploration reports for a mine to the local government to obtain a mining rights permit for a mine. If an applicant for the mining rights permit is not the owner of a mine, the applicant must first enter into a lease agreement with the mine owner before submitting an application. The mining rights permit is subject to renewal on a regular basis. Furthermore, we are required to obtain land use rights on the land in order to operate these mines. We lease the land use rights relating to our own mines in China from Chinalco pursuant to a land use rights lease agreement that became effective upon our formation. Chinalco's land use rights relating to over 90% of our mining properties in China are for 50-year terms beginning on July 1, 2001. The remaining land use rights relating to the mines we own and operate in China are for shorter terms, some as short as one year. All of our land use rights lease agreements end on the expiry date of the mining rights or the end of the working life of the mine, whichever is earlier. Both the land use rights and land use rights lease agreements are renewable.

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For our own mines in Indonesia and Laos, neither proven nor probable reserves have been established as of the date of this annual report. The following table sets forth certain estimated details of the reserves for our own mines in China as of December 31, 2013:

Mine	Total Reserves <sup>(1)(2)</sup> (million tonnes)	Average Grade (%)		
		Al <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>	Ratio of Average A/S <sup>(3)</sup>
Pingguo mine	77.37	54.44	4.82	11.29
Guizhou No. 1 mine	1.45	65.94	11.08	5.95
Guizhou No. 2 mine	21.49	62.95	9.61	6.55

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Zunyi mine	8.05	57.27	9.83	5.83
Xiaoyi mine	25	61.07	14.59	4.19
Shanxi Other Mines	15.72	63.00	11.17	5.64
Huaxing mine <sup>(5)</sup>	8.77	64.31	8.84	7.28
Mianchi mine	2.11	63.13	12.26	5.15
Luoyang mine	4.35	60.2	10.91	5.52
Xiaoguan mine <sup>(4)</sup>	21.32	63.52	15.23	4.17
Gongyi mine	2.91	63.99	13.92	4.6
Dengfeng mine	0.43	60.01	8.80	6.82
Xinmi mine <sup>(4)</sup>	1.84	67.85	10.34	6.56
Sanmenxia mine	38.75	64.91	11.03	5.89
Xuchang mine	0.47	64.15	14.11	4.54
Jiaozuo mine	1.79	59.53	14.60	4.08
Pingdingshan mine	2.39	62.56	12.50	5.01
Yangquan mine	5.58	60.23	12.66	4.76
Nanchuan mine	31.33	61.00	13.68	4.46
Total (average) reserves	<b>271.12</b>	<b>60.25</b>	<b>10.12</b>	<b>5.96</b>
<b>By reserve type</b>				
Proven reserve	132.20	60.68	10.27	5.91
Probable reserve	138.92	59.85	9.97	6.00
Total (average) reserves	<b>271.12</b>	<b>60.25</b>	<b>10.12</b>	<b>5.96</b>

(1) Our reserves take into consideration mining dilution and loss factors, which generally vary from 5% to 10% and are based on the planned mining method and selected drill data for each site.

(2) Our metallurgical recovery factors are calculated in accordance with the relevant PRC mining standards and vary from mine to mine.

(3) Refers to the ratio of average grade of  $Al_2O_3$  to the average grade of  $SiO_2$  of the reserves.

(4) In 2013, Xiaoguan mine was divided into two mines, namely, Xiaoguan mine and Xinmi mine.

(5) Shanxi Huaxing obtained its mining permit in August 2013.

We have implemented a safety control program to achieve the targets set in our internal guidelines for safety and risk control management and to maintain compliance with the National Mining Safety Law and related rules and regulations in China. Our safety control program combines close supervision and routine inspection of mining conditions with continual implementation of safety measures and procedures at our own bauxite mines and safety training for our mining personnel. In 2013, we extracted approximately 17.1 million tonnes of bauxite from our own mines and did not experience any mining accidents that involved serious work injuries or death.

*Jointly-Operated Mines.* To optimize our resources and reduce costs, we manage our jointly-operated mines by contracting with local companies for their mining services to operate mines owned by us. Generally, we are able to control the mining operations of our jointly-operated mines, including determination of production schedules as well as the amounts and grades of bauxite produced. In the years ended December 31, 2011, 2012 and 2013, our jointly-operated mines produced 4,300 tonnes, nil and nil of bauxite, respectively.

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As of December 31, 2013, we had one jointly-operated mine in China, namely, Xiataohua mine. We completed the restructuring of the operations of Dayu mine, which used to be one of our jointly-operated mines, as a mining area of one of our own mines in 2013 and are in the process of applying for the mining permit. We expect to resume its operations by the end of 2014. Xiataohua mine is accessible by motor vehicles via public roads, and is powered by diesel fuel. The following table sets forth information on Xiataohua mine as of December 31, 2013:

<b>Mine</b>	<b>Province</b>	<b>Name of Joint Operator</b>	<b>Mining Method</b>	<b>Permit Renewal</b>	<b>Present Condition/Current State of Exploration</b>	<b>Current Status</b>
Xiataohua mine	Shanxi	n/a <sup>(1)</sup>	Open pit	June 2014	Exploration is finished	The previous mining rights holder is in the process of transferring the mining rights to us and we will become the sole owner of the mine and are conducting research on the development plan of the mine. We are searching for operators for future development.

(1) We have decided to cooperate with other parties to undertake the mining operations in this mine. However, as of December 31, 2013, we had not confirmed any party as our partner.

The following table sets forth the specific details of Xiataohua mine as of December 31, 2013:

<b>Mine</b>	<b>Total Reserves (million tonnes)</b>	<b>Average Grade (%)</b>		
		<b>Al<sub>2</sub>O<sub>3</sub></b>	<b>SiO<sub>2</sub></b>	<b>Ratio of Average A/S</b>
Xiataohua mine	5.00	58.97	13.91	4.24

**By reserve type**

Proven reserve	-	-	-	-
Probable reserve	5.00	58.97	13.91	4.24
<b>Total (average)reserves</b>	<b>5.00</b>	<b>58.97</b>	<b>13.91</b>	<b>4.24</b>

(1)Our reserves take into consideration mining dilution and loss factors, which generally vary from 5% to 10% and are based on the planning mining method and selected drill data for each site.

(2)Our metallurgical recovery factors are calculated in accordance with the relevant PRC mining standards and vary from mine to mine.

(3)Refers to the ratio of average grade of  $Al_2O_3$  to the average grade of  $SiO_2$  of the reserves.

*Other Suppliers.* In addition to our own mines and our jointly-operated mines, we also source bauxite from other suppliers. A majority of other suppliers are small independent mines. Small independent mines are not affiliated with us and generally have annual bauxite production capacities not exceeding 200,000 tonnes. These mines have been an important source of bauxite for our operations. We purchase bauxite directly from small independent mines or through local distributors that procure bauxite from these mines. In addition, we also secure a portion of bauxite overseas. Bauxite secured from other suppliers accounted for 51.0% of our total bauxite supply in 2013.

*Bauxite Procurement.* The corporate management department at our headquarters is responsible for the oversight and coordination of our supply of bauxite. To determine how our bauxite requirement will be allocated among our principal sources each year, we first estimate our total bauxite needs for the year. Based on market conditions, production costs and other factors, we determine the amount of bauxite that we wish to source from our own mines, and allocate the remaining requirements among the jointly-operated mines and other suppliers. Our management or operational control of our own mines and jointly-operated mines generally allows us to adjust procurement from these sources during the course of the year to accommodate changes in our plans or market conditions.

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*Alumina-to-Silica Ratio.* The production method for alumina refining is determined by the mineral composition of the bauxite, in particular, its alumina- to-silica ratio. Most of the bauxite reserves in China are diasporic with low alumina-to-silica ratios. Based on our current technology, an efficient application of the Bayer process requires bauxite with an alumina-to-silica ratio of 10:1 or higher, while the sintering process can refine bauxite with an alumina-to-silica ratio as low as 4:1. The average alumina-to-silica ratio of the proven and probable reserves of our mines ranges from approximately 4.08:1 to 11.29:1.

*Prices.* There is neither governmental regulation on bauxite prices nor an official trading market for bauxite in China. We negotiate bauxite prices with our suppliers based on ore quality, mining costs, market conditions, transportation costs and various governmental taxes or levies, including a resource tax imposed by local governments. As we procure bauxite from three different sources, our total bauxite cost is influenced by the following factors:

- the cost of our mining operations;
- the terms of our operational arrangements with respect to our jointly-operated mines; and

- the market conditions relating to purchases from small independent mines.

The average purchase price of bauxite per tonne from our joint operations and other suppliers in 2011, 2012 and 2013 was approximately RMB353.6, RMB309.0 and RMB393.3, respectively. The average cost of bauxite per tonne from our own mines in 2011, 2012 and 2013 was approximately RMB176.0, RMB207.0 and RMB231.0, respectively. Our jointly-operated mine did not produce bauxite in 2012 and 2013.

We purchase a substantial amount of bauxite to satisfy our alumina production needs. Additionally, to fully utilize the bauxite from our mines, we refine all bauxite that meets the minimum technical requirements for our production of alumina. We also purchase higher grade ore from other suppliers and blend the ore of various grades to meet the technical requirements for our alumina production. This practice allows for flexibility and the inclusion of lower grade bauxite to optimize the use of bauxite deposits available to us. We do not use our historical average purchase prices for 2011, 2012 and 2013, or any other historical index to estimate our bauxite reserves.

The following table sets forth our capital expenditures for our bauxite mines for the periods indicated:

	<b>Year Ended December 31,</b>		
	<b>2011</b>	<b>2012</b>	<b>2013</b>
	<i>(RMB in thousands)</i>		
<b>Capital Expenditures</b>			
Infrastructure construction	157,000.0	335,440.0	766,917.1
Facility upgrade	56,000.0	-	-
<b>Total</b>	<b>213,000.0</b>	<b>335,440.0</b>	<b>766,917.1</b>

### *Primary Aluminum*

An average of approximately 1.9 tonnes of alumina and 13,817 kWh of electricity were required to produce one tonne of primary aluminum in 2013. Alumina and electricity, the two principal components of costs in the smelting process, accounted for approximately 35.4% and 43.2%, respectively, of our unit primary aluminum production costs in 2013. Apart from alumina and electricity, we also require carbon anodes, carbon cathodes and sodium fluoride for our smelting operations.

Alumina is the main raw material in the production of primary aluminum. In 2013, our smelters consumed approximately 7.4 million tonnes of alumina to produce approximately 3.8 million tonnes of primary aluminum. Our Shandong, Henan, Guizhou and Guangxi branches have historically sourced all or substantially all of the alumina required for their primary aluminum production from their respective integrated refineries. Our primary aluminum plants that do not have integrated alumina refining operations onsite obtain alumina internally from our alumina refineries located elsewhere or externally on the market.

## Supplemental Materials, Electricity and Fuel

The procurement department at our headquarters coordinates and manages our supply chain for all our major raw materials in conjunction with the distribution center at each production facility, which manages the logistics and inventory of raw materials locally. We are able to purchase diesel, the main fuel used by our mining and manufacturing equipment, from the public markets, and we source our water from local rivers, lakes or underground sources.

### *Alumina*

Electricity, coal, alkali (caustic soda or soda ash) and heavy oil are the principal materials used in our alumina production. Electricity is one of the principal cost components in our refining process. We generate electricity at a number of refineries and purchase our remaining electric power requirement from regional power grids at government-mandated rates. Most of our power supply plans are one to three year renewable plans. Power prices in China can vary, sometimes substantially, from one region to another, based on demand and power production costs in the region. Power costs for our various alumina refineries vary accordingly.

Large quantities of coal is used as a reducing agent and fuel to produce steam and gas in the alumina refining process. As of the date of this annual report, we held minority interests in a number of coal mining enterprises, including Shanxi Jiexiu, Qinghai Energy, Xuehugou Coal Industry Co., Ltd., Datong Coal Group Huasheng Wanjie Coal Co., Ltd., Dongdong Coal, Chalco Liupanshui, Huozhou Coal Group Xingshengyuan Coal Co., Ltd. and Guizhou Yuneng. We hold 70% of the equity interest in Gansu Huayang, which holds mining rights for coal deposits in the Luochuan mining area, Gansu Province. We have also acquired the mining rights for coal deposits in the Laodonghe area, Guizhou Province. In addition, we have acquired 70.82% of the equity interest in Ningxia Energy, which holds mining rights for coal deposits in Ningxia Autonomous Region.

All of the coal mining enterprises in which we directly or indirectly have equity interest are currently in the trial production or commercial production stage, except:

- Panlong mine, one of the coal mines of Chalco Liupanshui, a joint venture company in which we hold 49% of the equity interest;
- Huozhou Coal Group Xingshengyuan Coal Co., Ltd., a joint venture company in which Shanxi Huasheng holds 43.03% of the equity interest;
- Guizhou Yuneng, a joint venture company in which we hold 25% of the equity interest; and
- Gansu Huayang.

Gansu Huayang is currently under exploration. Panlong mine, Huozhou Coal Group Xingshengyuan Coal Co., Ltd. and Guizhou Yuneng are under development. By investing in coal mining enterprises and acquiring mining rights for coal deposits, we plan to partially offset our future energy costs, and secure a portion of the coal we consume in our operations.

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Alkali is used as a supplemental material in alumina refining. The sintering process and the Bayer-sintering combined process require soda ash while caustic soda is used in the Bayer process. Our alumina refineries use heavy oil, natural gas and coal gas as fuel to refine alumina. There is no governmental regulation of the prices of coal, alkali or fuel. We purchase these raw materials from external suppliers under negotiated supply contracts, which we believe are

competitively priced. We have not experienced difficulty in obtaining these materials in sufficient quantity and at acceptable prices.

### ***Primary Aluminum***

Smelting primary aluminum requires a substantial and continuous supply of electricity. In 2013, we consumed 56.1 billion kWh of electricity for our primary aluminum production. The availability and price of electricity are key factors in our primary aluminum production. Electricity costs have fluctuated in recent years due to periodic shortages of electricity in China, cyclical demand and government policies to regulate key industries. See "Item 5. Operating and Financial Review and Prospects - A. Operating Results - Overview - Factors Affecting Our Results of Operations - Manufacturing Costs."

We generate electricity at three of our smelters and purchase our remaining electric power requirement from regional power grids or directly from power generation enterprises. Except for one of our smelters that has entered into direct purchase agreements with power generation enterprises, we purchase electricity from the regional power grids at prices set by the government. Industrial users within each region are generally subject to a common electricity tariff schedule, but prices vary, sometimes substantially, across regions. We believe our power supply from regional grids is generally not reliant upon any particular generation facility supplying the grid. Electricity purchased from different power grids is subject to different tariff levels in 2013. The average electricity cost of our smelters was RMB0.4469/kWh in 2013.

Carbon anodes and cathodes are key raw materials in the smelting process. Each of our smelters is able to produce carbon products necessary for its operations other than carbon cathodes. Most of our carbon cathodes are supplied by our Guizhou branch, which operates our only carbon cathode production facility and sells carbon cathodes to external smelters in China.

### **Sales and Marketing**

We coordinate substantially all of our sales and marketing activities of our self-produced alumina products and some of our sales and marketing activities of our self-produced primary aluminum products through Chalco Trading. Our subsidiaries and branches sell some of our self-produced primary aluminum products directly to external customers. Our alumina refineries sell our self-produced alumina chemical products directly to external customers or indirectly through Chalco Trading for subsequent external trading. For all of our self-produced products that are sold either through Chalco Trading for subsequent external sale or directly to external customers, our subsidiaries and branches play an important role in providing after-sales services and strengthening our presence in the marketplace. Since late 2009, we also have been engaged substantially in the trading of non-ferrous metal products including alumina, primary aluminum, copper, zinc and lead as well as coal products that we source from third-party suppliers through Chalco Trading.

### ***Alumina***

We sell our self-produced alumina to customers primarily through Chalco Trading, giving priority to customers with whom we have long-standing relationships and who have established a strong credit history, after reserving sufficient alumina for our forecasted primary aluminum production. In 2013, we supplied approximately 7.2 million tonnes of alumina produced at our refineries to our own smelters, which represented approximately 59.6% of our total alumina production, and sold the remainder to our customers. In addition, we also procure and sell outsourced alumina under long-term agreements or on the spot market through Chalco Trading. We sold approximately 4.3 million tonnes of outsourced alumina in 2013.

The sales prices of alumina that our alumina refineries sell internally to Chalco Trading are determined based on both a percentage of the average three-month primary aluminum futures prices on the SHFE in the preceding calendar month and the average spot price of alumina in the domestic market in the preceding calendar month. Chalco Trading coordinates the external sales of our alumina products. Chalco Trading sells our self-produced alumina and alumina sourced from third-party suppliers to smelters throughout China. All of our major customers in the past three years have been domestic smelters. In the case of alumina sourced from third-party suppliers, we may procure alumina under long-term supply agreements or on the spot market. Our long-term supply agreement for the procurement of alumina normally sets forth the quantity of alumina to be procured by us in each month with the price for each monthly delivery to be determined through negotiations in the month before delivery. We are normally required to pay the full price of the outsourced alumina before each delivery.

We sell most of our self-produced alumina and a portion of the outsourced alumina under long-term sales agreements with terms ranging from one year to three years. Our long-term sales agreement for alumina normally sets forth the quantity of alumina to be sold by us in each year or month with the price for each monthly delivery to be determined at a percentage of the average three-month primary aluminum futures prices on the SHFE in the calendar month before delivery. Our customer is normally required to pay for its procurement before each delivery. As a result, fluctuations of primary aluminum prices on the SHFE affect alumina prices under our long-term sales agreements.

Chalco Trading sells the rest of our self-produced and outsourced alumina products on the spot market. We set, and adjust as necessary, reference prices for the spot sales of self-produced alumina products and publish such reference prices on our website. In 2013, our highest and lowest reference spot price of domestic alumina was RMB2,700 per tonne and RMB2,473 per tonne, respectively. We set the price for the external sales of alumina products by reference to alumina prices at reference markets and taking into account the following considerations:

- alumina imports into China, CIF Chinese ports;
- international and domestic transportation costs;
- our short-term and mid-term projections for alumina;
- the 17% value-added tax applicable to our products;
- import related fees; and
- domestic supply and demand.

We sell the rest of the outsourced alumina on the spot market at prices determined through negotiations with our customers, taking into consideration factors including our procurement prices and the prevailing market conditions.

### ***Primary Aluminum***

Our primary aluminum manufacturing subsidiaries and branches sell a portion of our primary aluminum output directly to external customers. Our primary aluminum manufacturing subsidiaries and branches also sell a portion of our primary aluminum output internally to Chalco Trading at prices based on the futures prices of primary aluminum



on SHFE. Chalco Trading then coordinates the external sales of primary aluminum. We consume the remaining primary aluminum output at our own aluminum fabrication plants. Our subsidiaries and branches including Chalco Trading sell our self-produced primary aluminum products to external customers through the following three channels:

- Contract sales. Most of our primary aluminum sales are made pursuant to contracts entered into directly with our long-standing customers. Terms of the sales contracts for primary aluminum are typically one year. We price our primary aluminum products based on the SHFE futures prices.
- Sales on the SHFE. As part of our effort to manage market risk, we sell a portion of our primary aluminum products on the SHFE through futures contracts with terms ranging from one month to twelve months to hedge against declines in primary aluminum prices.
- Sales on the spot market. We also sell our primary aluminum products on the spot market at the reference prices we set and adjust as necessary.

In addition, we also procure and sell outsourced primary aluminum on the spot market or through short-term futures and options transactions. We sold approximately 3.5 million tonnes of outsourced primary aluminum in 2013.

To improve the efficiency of our distribution, we divide our China market into several regions as follows:

- southern China (including Guangdong and Fujian Provinces);
- eastern China (including Jiangsu and Zhejiang Provinces and Shanghai Municipality);
- southwestern China (including Sichuan Province and Chongqing Municipality);
- the Beijing-Tianjin-Tanggu area; and
- northeastern China (including Liaoning and Heilongjiang Provinces).

We sell substantially all of our self-produced and outsourced primary aluminum to domestic customers. We expect China to remain our key market for primary aluminum for the foreseeable future. Although we have conducted export sales in the past, all of our external sales of primary aluminum in 2013 were domestic sales. Customers of our primary aluminum products principally consist of aluminum fabricators and distributors that resell our primary aluminum products to aluminum fabricators or other purchasers.

We establish pricing guidelines for Chalco Trading to conduct external domestic sales of our self-produced primary aluminum products, taking into account three main factors: the primary aluminum spot prices and futures price on the SHFE; our production costs and expected profit margins; and supply and demand. We determine our sales prices of the outsourced primary aluminum through negotiations with our customers, taking into consideration factors including our procurement prices and the prevailing market conditions. As part of our efforts to coordinate and centralize sales, we also set minimum prices for primary aluminum products that are sold directly to external consumers by our subsidiaries and branches with respect to each region in China where our primary aluminum is sold. These minimum prices are determined by reference to the SHFE spot price for primary aluminum. The smelter filling a particular order from an external customer is generally responsible for negotiating the pricing and delivery terms and must comply with the minimum pricing guidelines unless it obtains prior approval from our headquarters. In general, we satisfy each purchase order with products from our nearest smelter to minimize transportation costs.

#### ***Alumina Chemical Products and Gallium***

Alumina chemical products and gallium are derived from our alumina production. We adjust our production of these products based on market demand. Our alumina refineries sell our alumina chemical products directly to external customers or indirectly to external customers through Chalco Trading for subsequent external trading.

We sell most of our alumina chemical products and gallium in China. Prices for our alumina chemical products and gallium are determined through negotiations with our customers, taking into consideration the market conditions. Our total sales of gallium in 2011, 2012 and 2013 amounted to approximately RMB118.0 million, RMB56.8 million and RMB149.8 million, respectively.

### ***Coal***

Ningxia Energy sells a portion of its self-produced coal directly to external customers through short-term contracts at prices determined through negotiations with our customers, taking into consideration factors including our procurement prices and the prevailing market conditions. Except a small percentage of the coal output supplied to Henan Aluminum, Ningxia Energy consume the rest of its self-produced coal at its own electric power plant.

In addition, we also procure and sell outsourced coal under long-term agreements or on the spot market through Chalco Trading. We sold approximately 6.3 million tonnes of outsourced coal in 2013.

### ***Trading of Outsourced Non-ferrous Metal Products and Other Materials***

Since late 2009, we have been substantially engaged in the trading of alumina and primary aluminum sourced from third-party suppliers. Please see "- Alumina" and "- Primary Aluminum" for more details. We also sell other non-ferrous metal products such as copper, zinc and lead as well as coal products that we procure from our third-party suppliers to external customers on the spot market or under long-term sales agreements. Please see "- Coal." In 2013, we sold approximately 804,449 tonnes of outsourced copper, zinc and lead. In addition, we also sell outsourced raw and ancillary materials in bulk to customers such as steel manufacturers and copper processing companies on the spot market.

Chalco Trading has a team with trading expertise to conduct research on the markets of non-ferrous metal products and other materials. From time to time, we may enter into futures and options transactions to hedge against price fluctuations in the non-ferrous metal product market.

### ***Delivery***

We rely on rail shipping and trucks for the delivery of products within China. Our alumina is transported by rail or trucks, and transportation costs are generally borne by our customers and excluded from our sales prices. For long-distance deliveries, we maintain spur lines connecting our plants to the national railway routes. The price of rail shipping on the PRC national railway system is fixed by the government.

Most of our primary aluminum products are transported by rail and our coal products are transported by trucks.

### ***Principal Facilities***

Our principal facilities include 21 principal production plants and our Research Institute. Set forth below is a description of our principal production plants.

#### ***Guangxi Branch***

The Guangxi branch commenced operations in 1994 and is located in Guangxi Zhuang Autonomous Region in southwestern China, an area rich in bauxite reserves. The Guangxi branch obtains bauxite delivered via highway from

the Pingguo mine, one of our wholly-owned mines, located less than 17 kilometers from the Guangxi branch.

The Pingguo mine contains large, easily exploitable bauxite reserves with high alumina-to-silica ratios. The Guangxi branch is our only principal refinery that exclusively uses the Bayer process. With technology and production equipment imported from Europe, the Guangxi refinery features a high level of automation and energy efficiency. Since its inception, we have continually increased the designed production capacity at this branch by removing production bottlenecks and investing in capacity expansions. Guangxi branch had an annual alumina production capacity of approximately 2,210,000 tonnes as of December 31, 2013. In 2013, the Guangxi branch produced approximately 2,403,100 tonnes of alumina, along with approximately 196,500 tonnes of alumina chemical products. Most of the alumina output at the Guangxi branch is used in the primary aluminum smelter at the same branch and the remainder is sold to third-party smelters.

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Our Guangxi branch also uses advanced 160Ka and 320Ka pre-bake reduction pot-lines developed by us in its smelting operations. As of December 31, 2013, our Guangxi branch's annual primary aluminum production capacity was approximately 139,500 tonnes and it produced approximately 126,500 tonnes of primary aluminum in 2013.

#### ***Guizhou Branch***

The Guizhou branch commenced its smelting operations in 1966 and was subsequently expanded to include alumina refining operations in 1978. In 2013, our Guizhou branch produced approximately 516,700 tonnes of alumina and 16,600 tonnes of alumina chemical products before we disposed of the assets of alumina production line of Guizhou branch to a subsidiary of Chinalco in June 2013. Our Guizhou branch uses 160Ka, 186Ka and 230Ka pre-bake reduction pot-lines in its primary aluminum production. As a result of technological innovations and overhauls since its inception, our Guizhou smelter is among the most technologically advanced smelters in China. As of December 31, 2013, our Guizhou branch had an annual primary aluminum production capacity of approximately 403,700 tonnes. In 2013, our Guizhou branch produced approximately 339,900 tonnes of primary aluminum.

Our Guizhou branch also contains a modern carbon production facility, which produces carbon cathodes in addition to carbon anodes. As the Guizhou branch is our only facility that produces carbon cathodes, it supplies carbon cathodes to seven of our primary aluminum smelters and our Research Institute. Its carbon cathodes are also sold to external customers throughout China.

#### ***Henan Branch***

The Henan branch commenced its alumina refining operation in 1966 and primary aluminum smelting operation in 1967 in Henan Province, a province rich in bauxite reserves. Bauxite is delivered to our Henan branch via railway and highway from the following mines: Xiaoguan mine, Gongyi mine and Dengfeng mine located in Zhengzhou, Luoyang mine in Luoyang, Mianchi mine in Mianchi, Xuchang mine in Zhengzhou, Sanmenxia mine in Sanmenxia and Jiaozuo mine in Jiaozuo and our mines in Indonesia. Our Henan branch was the first refinery in China to develop the Bayer-sintering combined process. We also have an alumina production line that uses the ore-dressing Bayer process, which we developed to refine low alumina-to-silica ratio bauxite. Since its inception, the Henan branch's production facilities have undergone substantial technological upgrades, based on equipment imported from Germany and Denmark. The refinery has also benefited from its access to high alumina-to-silica ratio bauxite from our own mines and through purchases on the market. Its alumina output is first used to satisfy its primary aluminum production, and the remainder is sold to our other smelters and external customers. Henan branch had an annual

alumina production capacity of approximately 2,410,000 tonnes as of December 31, 2013. In 2013, our Henan branch produced approximately 1,982,800 tonnes of alumina and 219,400 tonnes of alumina chemical products. Henan branch currently has the largest power generation capacity among our alumina refineries. In January 2013, we ceased the operation of the obsolete primary aluminum production facilities of Henan branch.

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### ***Shandong Branch***

The Shandong branch commenced operations in 1954 and has the capacity to produce alumina, primary aluminum and aluminum fabrication products. Bauxite is delivered to our Shandong branch via railway and highway from the Yangquan mine in Yangquan, Shanxi Province. Its alumina refinery was China's first production facility for alumina. It produces the majority of its alumina through the sintering process and Bayer process, but has an ore-dressing sintering operation. The Shandong branch uses bauxite from our mines in Indonesia and purchases the majority of the bauxite required for its production from small third-party mines in Henan and Shanxi Provinces. Its alumina output is first used to satisfy its primary aluminum production, and the remainder is sold to our other smelters as well as external customers. Shandong branch had an annual alumina production capacity of approximately 1,770,000 tonnes as of December 31, 2013. It produced approximately 1,535,200 tonnes of alumina in 2013.

In addition, our Shandong branch produces substantial amounts of alumina chemical products and produced approximately 973,700 tonnes of alumina chemical products in 2013. It is the largest and most technologically advanced alumina chemical products production facility in China with the ability to produce the widest variety of alumina chemical products.

As of December 31, 2013, our Shandong branch's annual primary aluminum production capacity was approximately 55,000 tonnes and it produced approximately 35,000 tonnes of primary aluminum in 2013.

Our Shandong branch also uses its self-produced primary aluminum to produce aluminum fabrication products. As of December 31, 2013, our Shandong branch had an annual aluminum fabrication production capacity of 10,000 tonnes and it produced approximately 9,095 tonnes of aluminum fabrication products in 2013.

### ***Qinghai Branch***

Located in Qinghai Province, our Qinghai branch is a stand-alone primary aluminum production facility. This branch commenced operations in 1987 and is one of the most technologically advanced primary aluminum smelters in China. It operates 160Ka and 200Ka automated pre-bake anode reduction pot-lines that were developed domestically. It benefits from relatively low electricity costs in Qinghai Province due to the hydroelectric power stations in the region. The Qinghai branch sources alumina from our Shanxi, Shandong, Henan and Zhongzhou branches, but incurs higher transportation costs for both raw materials and its primary aluminum products than our other branches. The Qinghai branch produced approximately 386,700 tonnes of primary aluminum in 2013, slightly exceeding its designed annual production capacity of approximately 367,000 tonnes as of December 31, 2013.

### ***Shanxi Branch***

Our Shanxi branch commenced operations in 1987 and is located in Shanxi Province, a province rich in bauxite deposits. Bauxite is transported to our Shanxi branch via railway and highway from the Xiaoyi mine in Shanxi Province. Our Shanxi branch is a stand-alone alumina plant. Shanxi branch had an annual alumina production

capacity of approximately 2,747,000 tonnes as of December 31, 2013. Our Shanxi branch produced approximately 2,249,900 tonnes of alumina and 13,000 tonnes of alumina chemical products in 2013.

Our Shanxi branch's production facilities are primarily imported. Shanxi branch relies on bauxite from our own mines as well as external suppliers. It is in the proximity of large coal mines and substantial water resources and currently has the second largest power generation capacity among our alumina refineries.

### ***Zhongzhou Branch***

Located in Henan Province, our Zhongzhou branch is a stand-alone alumina plant, located near abundant bauxite, coal and water supplies. It commenced operations in 1993 and is equipped with imported and self-developed technology and has undergone various improvements and upgrades, in particular to its sintering process and Bayer process. Our Zhongzhou branch obtains bauxite supplies from our mines in Indonesia and from external suppliers in Henan Province and Shanxi Province.

Our Zhongzhou branch had an annual alumina production capacity of approximately 2,980,000 tonnes as of December 31, 2013. Our Zhongzhou branch produced approximately 1,982,600 tonnes of alumina and approximately 240,000 tonnes of alumina chemical products in 2013.

### ***Zunyi Alumina***

Zunyi Alumina is located in Zunyi, Guizhou Province. In April 2006, we entered into a joint venture agreement with Guizhou Wujiang Hydroelectric Co., Ltd, to establish a joint venture company, Zunyi Alumina. We held 73.28% of the equity interests in Zunyi Alumina as of December 31, 2013. Zunyi Alumina completed the construction of alumina production facilities and commenced operations in 2010. After the completion of its expansion project in 2012, Zunyi Alumina's annual alumina production capacity reached approximately 1,000,000 tonnes as of December 31, 2013. Zunyi Alumina produced approximately 978,100 tonnes of alumina and 2,400 tonnes of alumina chemical products in 2013.

### ***Shanxi Huaxing***

Located at Xing Xian, Lvliang City of Shanxi Province, Shanxi Huaxing is a stand-alone alumina plant which commenced trial production in October 2013. Shanxi Huaxing obtains bauxite supplies from our own mines delivered primarily via highway and is located near abundant coal and water supplies.

Shanxi Huaxing had an annual alumina production capacity of approximately 800,000 tonnes as of December 31, 2013. Shanxi Huaxing produced approximately 30,000 tonnes of alumina in 2013.

### ***Chongqing Branch***

Our Chongqing branch is located in Chongqing. Chongqing branch completed the construction of alumina production facilities in 2010 and its annual alumina production capacity was approximately 800,000 tonnes as of December 31, 2013. Chongqing branch produced approximately 464,800 tonnes of alumina and 7,000 tonnes of alumina chemical products in 2013.

### ***Lanzhou Branch***

Located in Lanzhou city in Gansu Province, our Lanzhou branch is a stand-alone primary aluminum plant. It was part of Lanzhou Aluminum before July 2007 and was acquired by us through share exchange in April 2007. In July 2007, Lanzhou Aluminum was divided into two wholly-owned entities: Lanzhou branch and Northwest Aluminum. Our Lanzhou branch owns a primary aluminum smelting plant with a designed annual primary aluminum production capacity of approximately 388,000 tonnes as of December 31, 2013. It produced approximately 359,400 tonnes of primary aluminum in 2013.

### ***Shanxi Huaze***

Shanxi Huaze is situated in Shanxi Province. In March 2003, we established the joint venture company, Shanxi Huaze, with Zhangze Electric Power to commence the construction of a primary aluminum production facility. Shanxi Huaze's designed annual production capacity of primary aluminum was approximately 350,000 tonnes as of December 31, 2013 and it produced approximately 356,600 tonnes of primary aluminum in 2013. We currently hold 60% of the equity interest of Shanxi Huaze.

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### ***Shanxi Huasheng***

Shanxi Huasheng is situated in Shanxi Province. In December 2005, we entered into a joint venture agreement with Shanxi Guan Lv Company Limited to establish a joint venture company, Shanxi Huasheng. Shanxi Huasheng commenced operations in March 2006 and had a designed annual production capacity of primary aluminum of approximately 220,000 tonnes as of December 31, 2013. In 2013, Shanxi Huasheng produced approximately 223,200 tonnes of primary aluminum. We currently hold 51% of the equity interest in Shanxi Huasheng.

### ***Zunyi Aluminum***

Zunyi Aluminum is situated in Guizhou Province. We currently hold 62.1% of the equity interest in Zunyi Aluminum. Zunyi Aluminum's annual primary aluminum production capacity was approximately 235,000 tonnes as of December 31, 2013 and it produced approximately 227,500 tonnes of primary aluminum in 2013.

### ***Fushun Aluminum***

Fushun Aluminum is situated in Liaoning Province, and is a stand-alone primary aluminum plant. In March 2006, we entered into a share transfer agreement with Liaoning Fushun Aluminum Plant to acquire 100% of the equity interests in Fushun Aluminum for a consideration of RMB500 million. Fushun Aluminum's primary business is the production of primary aluminum and carbon products. Fushun Aluminum had an annual primary aluminum production capacity of approximately 330,000 tonnes as of December 31, 2013. Fushun Aluminum produced approximately 305,100 tonnes of primary aluminum in 2013.

### ***Shandong Huayu***

Shandong Huayu is situated in Shandong Province and is a stand-alone primary aluminum plant. We currently hold 55% of the equity interest in Shandong Huayu. Shandong Huayu had an annual primary aluminum production capacity of approximately 200,000 tonnes as of December 31, 2013. Shandong Huayu also has supporting facilities

and coal-fired generators. In 2013, Shandong Huayu produced approximately 221,700 tonnes of primary aluminum.

### ***Gansu Hualu***

Gansu Hualu is situated in Gansu Province, and is a stand-alone primary aluminum plant. In August 2006, we entered into a share transfer agreement with Baiyin Nonferrous Metal (Group) Co., Ltd. ("Baiyin Nonferrous") and Baiyin Ibis Aluminum Co., Ltd. ("Baiyin Ibis"). Baiyin Nonferrous contributed 127,000 tonnes of primary aluminum smelting and supporting facilities owned by Baiyin Ibis as capital contribution and holds a 49% equity interest in Gansu Hualu, a subsidiary of Baiyin Ibis, and we hold 51% of the equity interest in Gansu Hualu. Gansu Hualu had an annual primary aluminum production capacity of approximately 230,000 tonnes as of December 31, 2013 and it produced approximately 214,300 tonnes of primary aluminum in 2013.

### ***Baotou Aluminum***

Baotou Aluminum is located in Inner Mongolia Autonomous Region, and is a stand-alone primary aluminum plant. On December 28, 2007, through A Shares issuance and exchange for Baotou Aluminum shares, we acquired 100% of the equity interest of Baotou Aluminum. Baotou Aluminum had a designed annual production capacity of approximately 388,000 tonnes as of December 31, 2013. In 2013, it produced approximately 366,300 tonnes of primary aluminum.

### ***Liancheng branch***

Liancheng branch is located in Gansu Province. In late May, 2008, we acquired 100% of the equity interest of Liancheng Longxing Aluminum Company Limited from Chinalco on the China Beijing Equity Exchange and subsequently turned it into our Liancheng branch which specializes in producing primary aluminum. Liancheng branch had an annual primary aluminum production capacity of approximately 523,000 tonnes as of December 31, 2013. It produced approximately 536,500 tonnes of primary aluminum in 2013.

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### ***Longmen Aluminum***

Located in Shanxi Province, Longmen Aluminum was established in 1991. We hold 55% of its equity interests. It specializes in producing primary aluminum. In March 2012, we ceased the operation of our obsolete primary aluminum production facilities of Longmen Aluminum.

### ***Chalco Nanhai***

Established in June 2007 and located in Foshan, Chalco Nanhai specializes in aluminum fabrication. Chalco Nanhai commenced its commercial operation in 2011 and had an annual aluminum fabrication production capacity of approximately 110,000 tonnes as of December 31, 2013. It produced approximately 13,967 tonnes of aluminum fabrication products in 2013.

### ***Ningxia Energy***

We acquired 70.82% of the equity interest in Ningxia Energy in January 2013. Please see "- A. History and Development of the Company - Significant Acquisitions and Joint Ventures." Ningxia Energy was established in June

2003. It is an integrated power generation company with total installed capacity of 2,671.5 MW, operating coal mines located in Ningxia Autonomous Region. Its principal business includes conventional coal-fire power generation and renewable energy generation. In 2013, Ningxia Energy produced approximately 7.6 million tonnes of coal and approximately 10.5 billion kWh of electricity.

### ***Research Institute***

Established in August 1965 and located in Zhengzhou, Henan Province, the Research Institute specializes in the research and development of technology for smelting aluminum. It is the only research institute in China dedicated to light metals research and has played a key role in bringing about technological innovations in China's aluminum industry. The Research Institute is central to our research and development efforts. The Research Institute operates test facilities, which produce alumina chemical products and primary aluminum. The Research Institute was approved by the Ministry of Science and Technology of the PRC in 2003 to establish the National Research Center of Aluminum Refinery Technologies and Engineering. Our Research Institute has a limited alumina and primary aluminum production capacity, which it uses in connection with its research and development efforts.

### **Competition**

#### ***Competition from Domestic Competitors***

#### ***Alumina***

As the largest producer of alumina in China, although we face competition from other large domestic refineries, we have several advantages over such competitors, including:

- we have access to a substantial and stable supply of bauxite;
- we are experienced in alumina production and our production technologies are specifically adapted to the particular chemical composition of bauxite found in China;
- we have strong capacity in technology research and hold certain proprietary technologies and patents;
- our substantial workforce that has extensive experience in production and management; and
- we enjoy strong government support under state policy.

In order to improve the efficiency and competitiveness of the Chinese alumina industry as well as to protect the environment, MIIT published "Standard Conditions for Aluminum Industry" (the "Standard Conditions") in July 2013, pursuant to which any new alumina project must be approved by the relevant department of the State Council of China and meet the requirements for annual production capacity and raw materials supply. The Standard Conditions have established a high entry barrier for new alumina producers in China.

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#### ***Primary Aluminum***

We derived all of our primary aluminum revenues from domestic sales in 2013. Our competitors include other domestic and international primary aluminum producers that conduct sales in China. In 2013, our primary aluminum production represented approximately 15.4% of total domestic production in China.



We are the largest integrated alumina and primary aluminum producer in China. Currently, six primary aluminum producers in China (including Chalco) have annual production capacities of one million tonnes or more, which represent approximately 49.8% of the total primary aluminum production capacity in China. 15 primary aluminum producers in China (including Chalco) have annual production capacity of 500,000 tonnes or more, which represent approximately 71.6% of the total primary aluminum production capacity in China. The PRC government encourages consolidation in the Chinese primary aluminum industry to create larger, more efficient producers that are better positioned to implement measures to reduce emissions. Moreover, according to the Standard Conditions, new aluminum projects for expanding production capacity must be approved by the relevant department of the State Council of China and must have stable supply of alumina. As of the date of the annual report, the relevant department of the State Council of China is not expected to approve any new aluminum projects except those environmental protection upgrade projects and expired equipment exchange projects planned by the PRC government.

Although we face competition from other large domestic smelters, we have several advantages over such competitors, including:

- **Scale of production.** With 14 primary aluminum smelters including our Research Institute, we can achieve significant economies of scale. In addition, our scale of production enables us to achieve high production volumes to fill large customer orders and maintain a large customer base. Through our national distribution network, we are able to make timely deliveries to customers from our local warehouses.
- **Technology.** We believe we have more sophisticated and efficient technology than most of our domestic competitors. Our Liancheng and Lanzhou branches are among the most technologically advanced primary aluminum smelting facilities in China. In addition, our technological support and research and development capabilities are superior to other domestic smelters.
- **Vertical integration.** As the largest integrated alumina and primary aluminum producer in China, we are able to supply alumina internally to our primary aluminum plants. As a result, we save on transportation, warehousing and related costs. In addition, because we operate our own alumina refineries, we are able to assure a stable supply of alumina for our primary aluminum smelting operations.
- **Quality.** The quality of our primary aluminum is generally higher than that of the primary aluminum produced by most of our domestic competitors.

The primary aluminum produced by most of our smelters satisfies the quality standards of the LME.

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### ***Competition from International Competitors***

The tariff rate for alumina and primary aluminum imports was eliminated on January 1, 2008 and August 1, 2007, respectively. In 2013, China imported approximately 3.8 million tonnes of alumina, representing approximately a 24.0% decrease from 2012. China had net import of approximately 255,000 tonnes of primary aluminum in 2013, which represented a 35.1% decrease from 2012. We expect to continue to face competition from international suppliers of alumina and primary aluminum which are large international companies. Some competitors may also consider establishing joint venture companies with local producers in China to gain access to the resources in China and to lower transportation costs. However, we expect to continue benefiting from certain PRC governmental policies that promote the growth of large domestic smelters.

### **Research and Development**

Our research and development efforts over the years have facilitated the expansion of our production capacity and reduced our unit costs. We have successfully commercialized our previous research and development results in various technologies. In 2013, we completed 110 technological projects, including 12 technology development projects, 15 industrialization, promotion and application of advanced technologies projects and 83 basic application projects. In addition, we filed a total of 89 patent applications in 2013.

As of December 31, 2013, we owned 1,464 patents, which were primarily related to technologies and know-how, equipment and new products. Once registered, a patent in China for a new invention is valid for 20 years and for a new function or a new design, 10 years from the date of the patent application. As of December 31, 2013, we owned 36 trademarks, each of which had a term of 10 years.

We do not regard any single patent, license, or trademark to be material to our sales and operations as a whole. We have no material patents, licenses, or trademarks, the duration of which cannot, in the judgment of our management, be extended as necessary. We are neither involved in any material intellectual property disputes against us nor are we pursuing any legislation relating to intellectual property rights against any party.

### **Environmental Protection**

Our operations are subject to a wide variety of PRC national and local environmental laws and regulations, including those governing waste discharge, generation, treatment and disposal of hazardous materials, land reclamation, air and water emissions and mining matters. For example, the PRC government has set discharge standards for emissions to air and water. To enforce these standards, national environmental protection authorities have imposed discharge fees that increase for each incremental amount of discharge up to the limit set by the regulation. The relevant PRC government agencies are authorized to order any operations that exceed discharge limits to take remediation measures, which are subject to the relevant agency's approval, or order the closure of any operations that fail to comply with applicable regulations. On February 6, 2010, the State Council of China issued "Notice on Further Strengthening the Elimination of Obsolete Production Capacities", which recommends all pre-bake reduction pot-lines below 100 Ka be closed by the end of 2011. Some of our primary aluminum utilities with a total capacity of 437,000 tonnes were shut down in compliance with this notice in 2011.

The pollutants discharged from our alumina refining process include red mud, waste water and gas emissions and particulates. Our primary aluminum production process generates fluorides, pitch fume and particulates. It is illegal to release these pollutants untreated, or those after treatment but still not complying with discharge limits, the discharge of these pollutants must comply with national and local discharge limits.

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Each of our alumina refineries, primary aluminum smelters and other production plants has its own waste treatment facilities onsite or has developed other methods to dispose of industrial waste in compliance with applicable environmental laws and regulations. We were granted ISO14001 accreditations issued by China Quality Certification Center and the International Certification Network in 2004. In 2013, we passed the review and the accreditations were renewed.

We have increased our energy-efficiency by implementing new production techniques and technologies, upgrading our production facilities, optimizing our production process and enhancing our logistics and operations management. Through these efficiency initiatives, we estimate that we conserved the energy equivalent of 950,000 tonnes of standard coal in 2013. We have incorporated clean technology and processes into our operations with a view to

promoting the concept of "zero emission" plants. Since 2009, we have achieved our target of zero industrial waste water emission.

Our total expenditures for maintaining compliance with environmental laws and regulations were RMB1,524.6 million, RMB1,073.7 million and RMB556.4 million for the years ended December 31, 2011, 2012 and 2013, respectively. We believe that our operations are substantially in compliance with currently applicable national and provincial environmental regulations.

### **Insurance**

We maintain insurance coverage for our property, plant and equipment, in particular our transportation vehicles and assets that we consider to be subject to significant operating risks. We also have limited coverage for natural disaster such as typhoons, tornados, floods, landslides and lightning strikes. However, there are certain types of losses, such as losses from war, acts of terrorism and natural disasters, for which we cannot obtain insurance at a reasonable cost or at all.

We are covered under the injury and accidental death insurance provided by the local government labor departments and do not separately maintain coverage for such risks. Consistent with what we believe to be the customary practice in China, we generally do not carry any third-party liability insurance to cover personal injury, environmental damage arising from accidents arising from property or related to our operations (other than our automobiles) or business interruption insurance. More extensive insurance is either unavailable in China or would impose a cost on our operations that would reduce our competitiveness.

Our insurance preminus were RMB75.9 million, RMB58.8 million and RMB41.0 million in 2011, 2012 and 2013, respectively.

### **Seasonality**

Our business is not subject to seasonality.

### **Regulatory Overview**

Producers of alumina and primary aluminum are subject to national industrial policies and relevant laws and regulations in areas of environmental protection, import and export, land use, foreign investment regulation and taxation. We are also subject to regulations relating to activities such as mining.

We are principally subject to governmental supervision and regulation by three agencies of the PRC government:

- the NDRC, which sets and implements the major policies concerning China's economic and social development, approves investments exceeding certain amounts, coordinates and improves the reform of the economic system;
- the Ministry of Land and Resources of China, which has the authority to grant land use licenses and mining right permits; and
- the Ministry of Industry and Information Technology, which formulates industrial policies and investment guidelines for all industries including the aluminum industry.

The following is a brief summary of the principal laws, regulations, policies and administrative directives to which we are subject.

### ***Requirements for Capital Investments***

Any capital markets financing activities by an enterprise or company incorporated in the PRC such as those to finance capital projects, are subject to approval by the CSRC and/or other relevant authorities in China, regardless of whether the funds are raised in China or on the international capital markets. An issuer incorporated in the PRC must obtain prior approval from the CSRC for issuance of equity securities or equity-linked securities. Offering of corporate bonds in the PRC by a listed PRC-incorporated company is subject to approval from the CSRC, while offering of enterprise bonds in the PRC by other enterprises is subject to approval from the People's Bank of China or the NDRC and/or other relevant authorities. Offering of bonds by a PRC-incorporated company outside the PRC is subject to approval from the NDRC and/or the State Administration of Foreign Exchange. For all overseas financing activities by an enterprise or company incorporated in the PRC, the issuer must register with and obtain prior approval from the NDRC and the administrative authorities of foreign exchange. Foreign investment in the exploring and mining of alumina and primary aluminum is permitted by the PRC government.

### ***Standard Conditions for Aluminum Industry***

Standard Conditions provides that bauxite mining, alumina and primary aluminum projects must comply with the state industry policies and overall plans on the development of aluminum industry, land use, urban planning and designation of functional zones. The aluminum smelting enterprises must be appropriately distributed according to conditions including availability of resources, energy and environment. The regulation indicates that with guidance and plans, aluminum smelting enterprises located in regions lacking competitive production elements should be gradually moved to more competitive region, and the amount of newly increased production capacity shall be strictly controlled to prevent excessive capacity caused by over-investing. The regulation further sets standards for production scale and major external conditions for newly established bauxite mining, alumina, electrolytic aluminum and recycled aluminum projects.

### ***Pricing***

The PRC government does not impose any limitations with respect to the pricing of alumina, primary aluminum and related products. Thus, alumina and primary aluminum producers are free to set prices for their products. All the raw materials, supplemental materials and other supplies that we purchase are based on market prices. Freight transportation on the national railway system is subject to government mandated pricing.

### ***Electricity Supply and Price***

The State Electricity Regulatory Commission of China is responsible for the supervision and administration of the power industry in China. The NDRC and local governments regulate electricity pricing. Electricity suppliers may not change their electricity prices without governmental authorization.

The Electric Power Law of China and related rules and regulations govern construction, generation, supply and consumption of electric power. Currently, China's state-owned power companies, through their respective local subsidiaries, operate all the regional power grids in China from which we obtain most of our electricity requirements. In October 2007, Chinese government issued "Notice on Further Solutions of the Difference in Electricity Rates", according to which the preferential electricity prices originally enjoyed by Chinese primary aluminum enterprises have been gradually abolished. In May 2010, Chinese government issued "Notice of Eliminating Preferential Electricity Rate for High Energy Consuming Enterprises and Related Matters", which further eliminated the preferential electricity price arrangement enjoyed by Chinese primary aluminum enterprises. In December 2013, the

NDRC and MIIT issued the "Circular on the Policies for Tiered Pricing of Electricity Used by Electrolytic Aluminum Enterprises" (the "Electricity Tiered Pricing Circular"), which became effective on January 1, 2014, to impose tiers of electricity prices on primary aluminum smelters. Specifically, if the alternating current consumed by any smelter is more than 13,700 kWh per tonne but no more than 13,800 kWh per tonne, such smelter must pay additional RMB0.02 per kWh for the electricity used. If the alternating current consumed by any smelter is more than 13,800 kWh per tonne, such smelter must pay additional RMB0.08 for per kWh for the electricity used.

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### ***Regulations Concerning Imports and Exports of Alumina and Primary Aluminum***

Import taxes on alumina and primary aluminum have been eliminated. The export tariff on certain primary aluminum products has been 15% since August 1, 2007.

### ***Environmental Protection Laws and Regulations***

The Ministry of Environmental Protection of China is responsible for supervision and administration of environmental protection in China. It formulates national environmental quality and discharge standards and monitors China's environmental system. Environmental protection bureaus at the county level or above are responsible for environmental protection within their respective jurisdictions.

Environmental regulations require each enterprise to file an environmental impact report with the relevant environmental bureau for approval before undertaking the construction of a new production facility or any major expansion or renovation of an existing production facility. New facilities built pursuant to this approval are not permitted to operate until the relevant environmental bureau has performed an inspection and concluded that the facilities are in compliance with environmental standards.

The Environmental Protection Law requires any facility that produces pollutants or other hazards to incorporate environmental protection measures in its operations and establish an environmental protection responsibility system. Such system includes adoption of effective measures to control and properly dispose of waste gases, waste water, waste residue, dust or other waste materials. Any entity that discharges pollution must register with the relevant environmental protection authority.

Penalties for breaches of the Environmental Protection Law include warning, payment of damages and imposition of fines. Any entity undertaking a construction project that fails to install pollution prevention and control facilities in compliance with environmental standards for a construction project may be ordered to suspend production or operations or to cease operations and may be fined. Criminal liability may be imposed for a material violation of environmental laws and regulations that causes any significant loss of property or personal injuries or death.

### ***Mineral Resources Laws and Regulations***

All mineral resources in China are owned by the state under the current Mineral Resources Law. Exploration, exploitation and mining operations must comply with the relevant provisions of the Mineral Resources Law and are under the supervision of the Ministry of Land and Resources. Exploration and exploitation of mineral resources are also subject to examination and approval by the Ministry of Land and Resources or relevant local authorities. Upon approval, the relevant administrative authorities, which are responsible for supervision and inspection of mining exploitation in their jurisdiction, will issue an exploration permit or mining permit. The holders of mining rights are

required to file with the relevant administrative authorities annually.

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The PRC government permits mine operators of collectively owned mines to exploit mineral resources in designated areas and individuals to mine scattered mineral resources. Such mine operators and individuals are subject to government regulation. Mining activities by individuals are restricted. Individuals are not permitted to exploit mineral reserves allocated for exploitation by a mining enterprise or company, or specified minerals prescribed by the state for protective mining. Indiscriminate mining that damages mineral resources is prohibited.

If mining activities result in damage to arable land, grassland or afforested area, the mining operator must take measures to return the land to an arable state within the prescribed time frame. Any entity or individual which fails to fulfill its remediation obligations may be fined and denied application for land use rights for new land by the relevant land and natural resources authorities.

It is unlawful for an entity or individual to conduct mining operations in areas designated for other legal mining operators. A mining operator whose exploitation causes harm to others in terms of production or in terms of living standards is liable for compensation and is required to take necessary remedial measures. When a mine is closed, a mine closure report and information concerning the mining facilities, hidden dangers, remediation and environmental protection must be submitted for examination and approval in accordance with the relevant PRC law and regulations.

The mineral products illegally extracted and the income derived from such activities may be confiscated and may result in fines, revocation of the mining permit and, in serious circumstances, criminal liability.

### ***Energy Conservation Law***

The new Energy Conservation Law came into effect on April 1, 2008. It sets out the general principles for reducing energy waste and improving efficiency of energy consumption. It urges the adjustment of industry structure and replacement of high energy consumption projects with new energy or renewable energy resources. In March 2014, the MIIT issued a regulation, the "Opinion on Implementing Supervision of Industrial Energy Conservation", which lists the primary aluminum smelting as one of the high energy consumption operations that will be highly monitored.

### ***Tax Laws and Regulation***

In March 2007, the PRC government promulgated the Enterprise Income Tax Law which became effective from January 1, 2008. The Enterprise Income Tax Law imposes a single income tax rate of 25% on both domestic and foreign invested enterprises. Certain branches and subsidiaries of us were granted tax concessions including preferential tax rates of 15%. On December 6, 2007, PRC government promulgated the Enterprise Income Tax Law Implementation Rules which also became effective on January 1, 2008.

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## **C. ORGANIZATIONAL STRUCTURE**

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Below is a summary of our corporate structure and principal subsidiaries as of December 31, 2013:

Company	Percentage of ownership interest attribution to the Company	Principal activities
Baotou Aluminum Co., Limited	100%	Manufacture and distribution of primary aluminum, aluminum alloy and related fabrication products and carbon products
Chalco Hong Kong Ltd. <sup>(1)</sup>	100%	Overseas investments and bauxite import and export activities
Chalco Zunyi Alumina Co., Ltd.	73.28%	Manufacture and distribution of alumina
China Aluminum International Trading Co., Ltd.	100%	Import and export activities
Chalco Mining Co., Ltd.	100%	Manufacture, acquisition and distribution of bauxite mines, limestone ore, aluminum magnesium ore and related nonferrous metal products
Fushun Aluminum Co., Ltd.	100%	Aluminum smelting, manufacture and distribution of nonferrous metals
Gansu Hualu Aluminum Co., Ltd.	51%	Manufacture and distribution of primary aluminum
Shandong Huayu Aluminum and Power Co., Ltd.	55%	Manufacture and distribution of primary aluminum
Shanxi Huasheng Aluminum Co., Ltd.	51%	Manufacture and distribution of primary aluminum, aluminum alloy and carbon-related products
Shanxi Huaze Aluminum and Power Co., Ltd.	60%	Manufacture and distribution of primary aluminum and anode carbon products and electricity generation and supply
Zunyi Aluminum Co., Ltd.	62.10%	Manufacture and distribution of primary aluminum
Shanxi Huaxing Alumina Co., Ltd.	100%	Manufacture and distribution of alumina
Gansu Huayang Mining Development Company Limited	70%	Manufacture and distribution of coal and other mineral products
Chalco Energy Co., Ltd.	100%	Thermoelectric supply and investment management
Chalco Ningxia Energy Group Co., Ltd.	70.82%	Thermal power, wind power and solar power generation, coal mining, and power related equipment manufacturing
Chalco Hong Kong Investment Company Limited	100%	Bond issuance

(1)Chalco Hong Kong Ltd. and Chalco Hong Kong Investment Company Limited are incorporated in Hong Kong and all other principal subsidiaries are incorporated in the PRC.

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**D. PROPERTY, PLANTS AND EQUIPMENT**

**Mines**

*Bauxite Mines*

The following map sets forth details of the area surrounding Pingguo mine, our largest bauxite mine in China:

The Guangxi Pingguo plant, located in the Guangxi Zhuang Autonomous Region, commenced operations in 1994. The surrounding infrastructure includes roadways and waterways.

*Modernization and Physical Condition, Equipment, Infrastructure and Other Facilities*



We have modern facilities at our mines in China, which were designed by professional PRC mine design institutes and adhere to international standards. Our mines are either open pit or underground. Our mines generally have mining offices and transportation facilities that have access to local roads and highways. In addition, we utilize advanced heavy equipment such as bulldozers and scrapers.

*Source of Power and Water*

All of our mining facilities in China are connected to the local or regional electric power grids. In addition, our mining facilities are connected to reliable water sources, all of which were sufficient for the requirements of each individual mine.

Our mines in Indonesia have access to local roads. The two mines in production are powered by diesel fuel and are equipped with washing machines.

**Coal Mines**

We acquired 70% of the equity interest in Gansu Huayang in March 2011, which holds exploration rights for certain coal deposits in Gansu Province, namely, Luochuan mine. The exploration permit will expire in October 2014. Luochuan mine is an underground mine and is currently under exploration. As of the date of this annual report, neither proven nor probable reserves have been established.

We acquired the mining rights for certain coal deposits Guizhou Province, namely Laodonghe mine, in January 2013 through Chalco Guizhou Mining Co., Ltd., in which we held 80% of the equity interest. The mining permit will expire in December 2018. We have completed the exploration but have not commenced development of Laodonghe mine. Laodonghe mine is an underground mine. As of the date of this annual report, neither proven nor probable reserves have been established.

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We completed the acquisition of 70.82% of the equity interest in Ningxia Energy in January 2013, which holds mining rights or exploration rights for certain coal deposits in Ningxia Autonomous Region. The coal mines owned and operated by Ningxia Energy include Wangwa mine, Wangwa No.2 mine, Yindonggou mine and Yinxingyijing mine, all of which are underground thermal coal mines. The operations at these coal mines are powered by electricity from local power grids and are accessible by public roads. As of the date of this annual report, neither proven nor probable reserves have been established.

Wangwa mine and Wangwa No.2 mine are currently in commercial production. We primarily use fully mechanized longwall mining method to extract coal from Wangwa mine and Wangwa No.2 mine and we use advanced coal mining equipment including hydraulic roof supports and shearers. Yindonggou mine has ceased production and is currently under construction for capacity expansion and technology upgrade, which is expected to be completed in the first quarter of 2015. The mining permit of Yindonggou mine will expire in July 2014 and we have applied to renew it. Ningxia Energy holds 50% of the interest in Yinxingyijing mine with the joint owner not participating in the operation of such mine. The exploration permit of Yinxingyijing mine will expire in August 2014 and we are in the process of applying for mining permit.

The following table sets forth detailed information on Wangwa mine and Wangwa No.2 mine:

**Wangwa mine**

**Wangwa No. 2 mine**

Nature of Ownership	Owned and operated by Ningxia Energy, a 70.82% subsidiary of Chalco	Owned and operated by Ningxia Energy, a 70.82% subsidiary of Chalco
Commencement of construction	1984 <sup>(1)</sup>	2007
Commencement of commercial production	1990 <sup>(1)</sup>	2010
Permit renewal	January 2017	July 2014
Mining recovery rate (%) <sup>(2)</sup>	78.4%	75.5%
Depth of mine ( <i>meters underground</i> )	400	400
Average thickness of main coal seam ( <i>meters</i> )	No.5 coal:10.7; No.8 coal: 6.1	9.2
Calorific value ( <i>Kcal/kg</i> )	5,105	5,480
Sulphur content (%)	1.0	1.2
Average ash content (%)	14.2	15.3

(1) Wangwa No.1 mine implemented a capacity expansion and technology upgrade in 2008 and resumed its production after completion of the foregoing expansion and upgrade in 2009. In addition, Wangwa No.1 mine is currently under construction for capacity expansion and technology upgrade and we expect to complete such expansion and upgrade in the first quarter of 2017.

(2) The mining recovery rate is the rate of the amount of coal recovered from a determined amount of reserves, which is calculated by dividing the actual volume of coal recovered in a year by the volume of reserves mined and consumed in the same year.

For the year ended December 31, 2013, Ningxia Energy incurred capital expenditures of RMB1,370.1 million and RMB48.9 million, respectively, on infrastructure construction and facility upgrading of its coal mines.

## Land

Chinalco leases to us 467 pieces or parcels of land, located in eight provinces, covering an aggregate area of approximately 63.9 million square meters for any purpose related to our operations and businesses. Currently, all leases for our properties are valid and have not expired. The leased land mainly consists of:

- 455 pieces of allocated land with an area of approximately 62.6 million square meters. Chinalco has obtained authorization from the relevant administrative authorities to manage and lease the land use rights for such land; and
- 12 pieces of land with an area of approximately 1.3 million square meters. Chinalco has paid the land premiums and obtained land use rights certificates.

The land is leased for the following terms:

- allocated land: 50 years commencing from July 1, 2001 (except for land use rights of mines operated by us, whose leased terms shall end on the expiration date of the mining rights or at the end of the actual mine life, whichever is earlier);
- granted land: until expiration of the relevant land use right permits; and
- for both allocated or granted land: normal commercial terms that stipulate, among other conditions, the terms of use, monthly or annual rental amounts payable in RMB and a six-month notification provision for termination of any lease agreement.

## **Buildings**

Our principal executive offices, which we lease from Chinalco, are located at No. 62 North Xizhimen Street, Hai Dian District, Beijing, People's Republic of China, 100082.

Pursuant to the reorganization in connection with our initial public offering in 2001, Chinalco transferred to us, among other operating assets, ownership of the buildings and properties for the operation of our core businesses. Chinalco retained its remaining buildings and properties for its operations. The buildings transferred to us comprise 4,631 buildings with an aggregate gross area of approximately 4.2 million square meters. These buildings may be sold or transferred only with the consent of Chinalco and in accordance with applicable land transfer procedures. Chinalco has undertaken to provide its consent and the necessary assistance to affect land grant procedures to ensure that our buildings can be legally transferred or sold.

We and Chinalco also lease to each other a number of other buildings and properties for ancillary uses, which comprise mainly buildings for offices, dormitory, canteen and storage purposes. We lease 50 buildings to Chinalco, with an aggregate gross area of approximately 40,256 square meters. Chinalco leases 168 buildings to us, with an aggregate gross area of approximately 334,670 square meters. The lease terms of all these buildings are 20 years commencing from July 1, 2001. Chinalco had obtained proper land and building title certificates for all of the buildings it leases to us by the end of 2004. On March 28, 2005, we entered into a tenancy agreement with China Aluminum Development Company Limited, a wholly-owned subsidiary of Chinalco, for leasing the office premises at 12th to 16th floors and 18th to 31st floors of No. 62 North Xizhimen Street, Hai Dian District, Beijing, PRC with an aggregate gross floor area of 30,160.81 square meters for a term of three years. On October 15, 2008, our tenancy agreement with China Aluminum Development Company Limited expired, and we renewed the tenancy agreement to extend it for another three years commencing on October 16, 2008, pursuant to which, the aggregated gross floor area we leased under such tenancy agreement was increased to 30,188.0 square meters. On October 10, 2010, we entered into a supplemental tenancy agreement with China Aluminum Development Company Limited, pursuant to which, the aggregate gross floor area we lease under the tenancy agreement was reduced to 26,036.3 square meters. On October 15, 2011, we renewed the tenancy agreement to extend it for another two years, pursuant to which, the aggregate gross floor area we lease under the tenancy agreement was further reduced to 23,551 square meters. On March 26, 2013, we renewed the tenancy agreement with its term to be expired on December 31, 2015.

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For environmental issues in relation to the utilization of our assets, please refer to "- Environmental Protection."

## **Our Expansion**

Our expansion projects in 2014 primarily include:

- Baotou Aluminum captive power plant project: This project is expected to be completed in 2014, with an annual electricity production capacity of approximately 3.9 billion kWh. We expect to invest a total amount

of approximately RMB2.7 billion in this project and we had invested approximately RMB1.6 billion as of December 31, 2013.

- Construction of two mining areas of Sanmenxia mine: This project is expected to be completed by the end of 2015, with an annual bauxite production capacity of 1.6 million tonnes. We expect to invest a total amount of approximately RMB1.4 billion in this project and we had invested approximately RMB384 million as of December 31, 2013.
- Capacity expansion and technology upgrade of Yindonggou mine: This project is expected to be completed in the first quarter of 2015, with an annual coal production capacity of 3 million tonnes. We expect to invest a total amount of approximately RMB2.7 billion in this project and we had invested approximately RMB1.2 billion as of December 31, 2013.
- Capacity expansion and technology upgrade of Wangwa mine: This project is expected to be completed in the first quarter of 2017, with an annual coal production capacity of 6 million tonnes. We expect to invest a total amount of approximately RMB3.1 billion in this project and we had invested approximately RMB238 million as of December 31, 2013.

We intend to fund these capital expenditures through a combination of internal funds derived from our own operations and the proceeds from medium-term and long-term debt financing.

**ITEM 4A. UNRESOLVED STAFF COMMENTS**

None.

**ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS**

The following discussion and analysis should be read in conjunction with our audited consolidated financial statements and selected historical financi